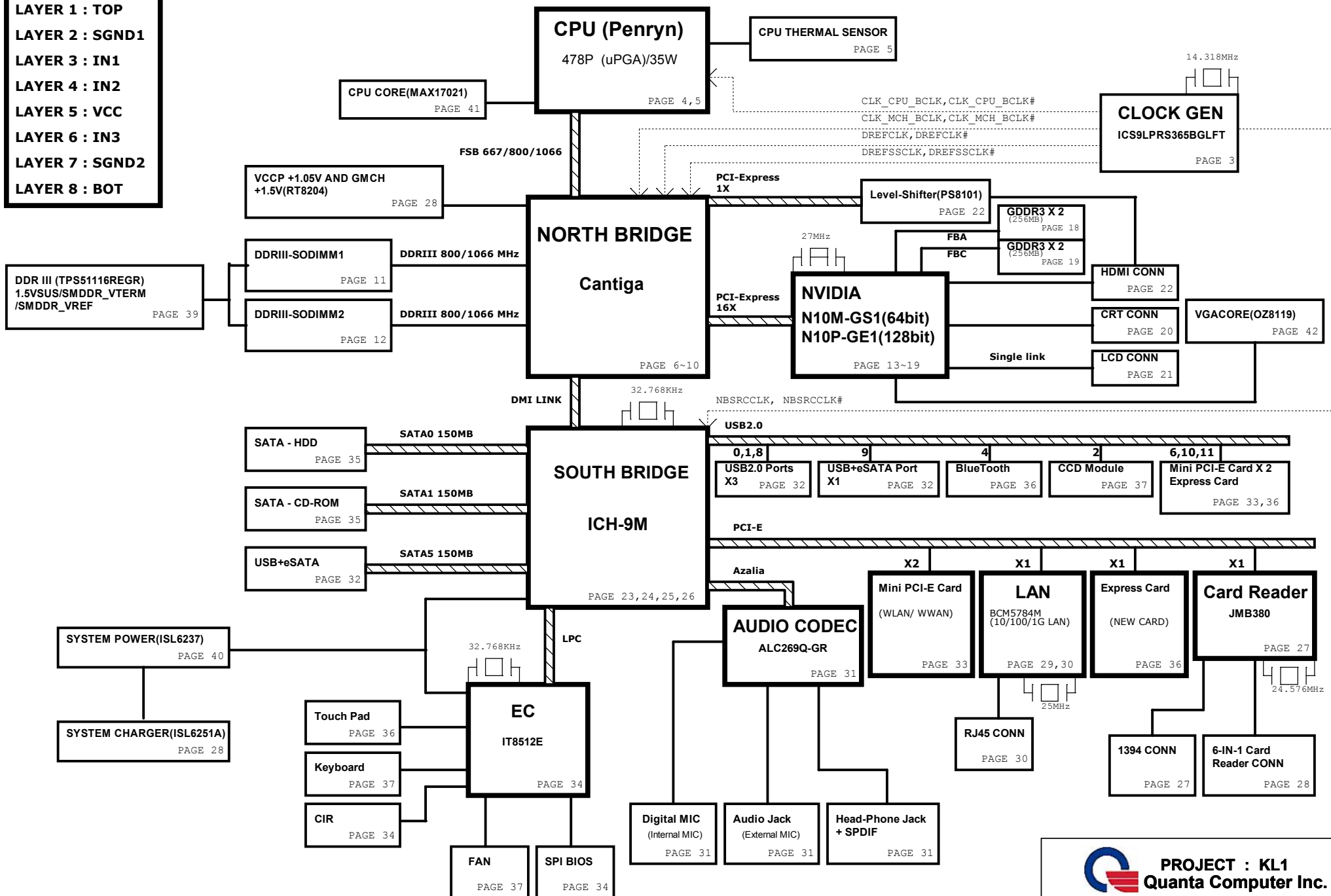


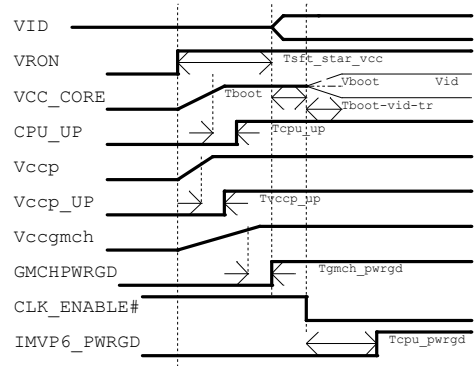
LAYER 1 : TOP
LAYER 2 : SGND1
LAYER 3 : IN1
LAYER 4 : IN2
LAYER 5 : VCC
LAYER 6 : IN3
LAYER 7 : SGND2
LAYER 8 : BOT



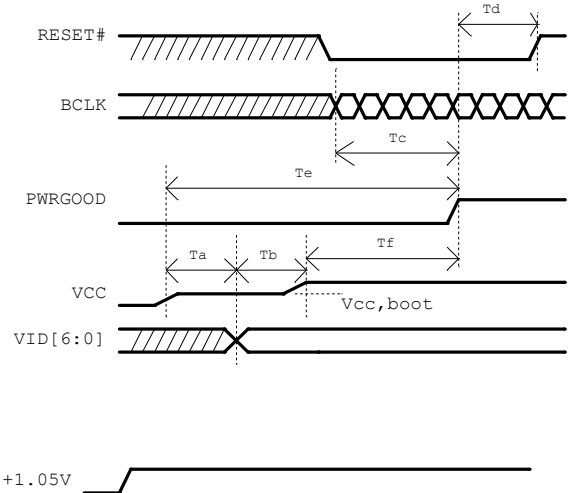
PCB Layers

Layer 1		TOP
Layer 2		GND
Layer 3		IN1
Layer 4		IN2
Layer 5		SVCC
Layer 6		IN3
Layer 7		GND
Layer 8		BOTTOM

Power On Sequencing Timing Diagram



Penryn Power-up Timing Specifications

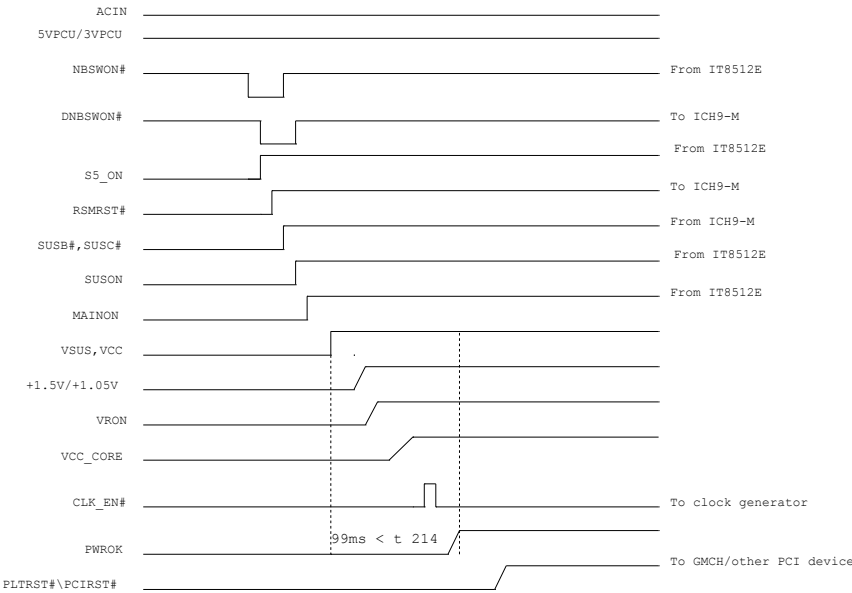


Ta=VCC and VCCP asseration to VID[6:0] vaild
Tb=VID[6:0] stable to VCC vaild
Tc=BCLK stable to PWRGOOD asseration
Td=PWRGOOD to RESET# de-asseration time
Te=Vcc,boot vaild to PWRGOOD asseration time

Voltage Rails

Voltage Rails	ON S0-S2	ON S3	ON S4	ON S5	Control signal
VCC_CORE	V				VRON
+1.5V	V				MAINON
+1.05V	V				MAINON
5V_S5/3V_S5	V	V	V	V	S5_ON
5VSUS/3VSUS/1.5VSUS	V	V			SUSON
SMDDDR_VTERM/+3V/+5V/+15V/+1.8V	V				MAINON
+VGACORE/+VGA1.1V	V				MAINON
LANVCC	V	V			LAN_ON
3VPCU	V	V	V	V	VL
5VPCU	V	V	V	V	VL

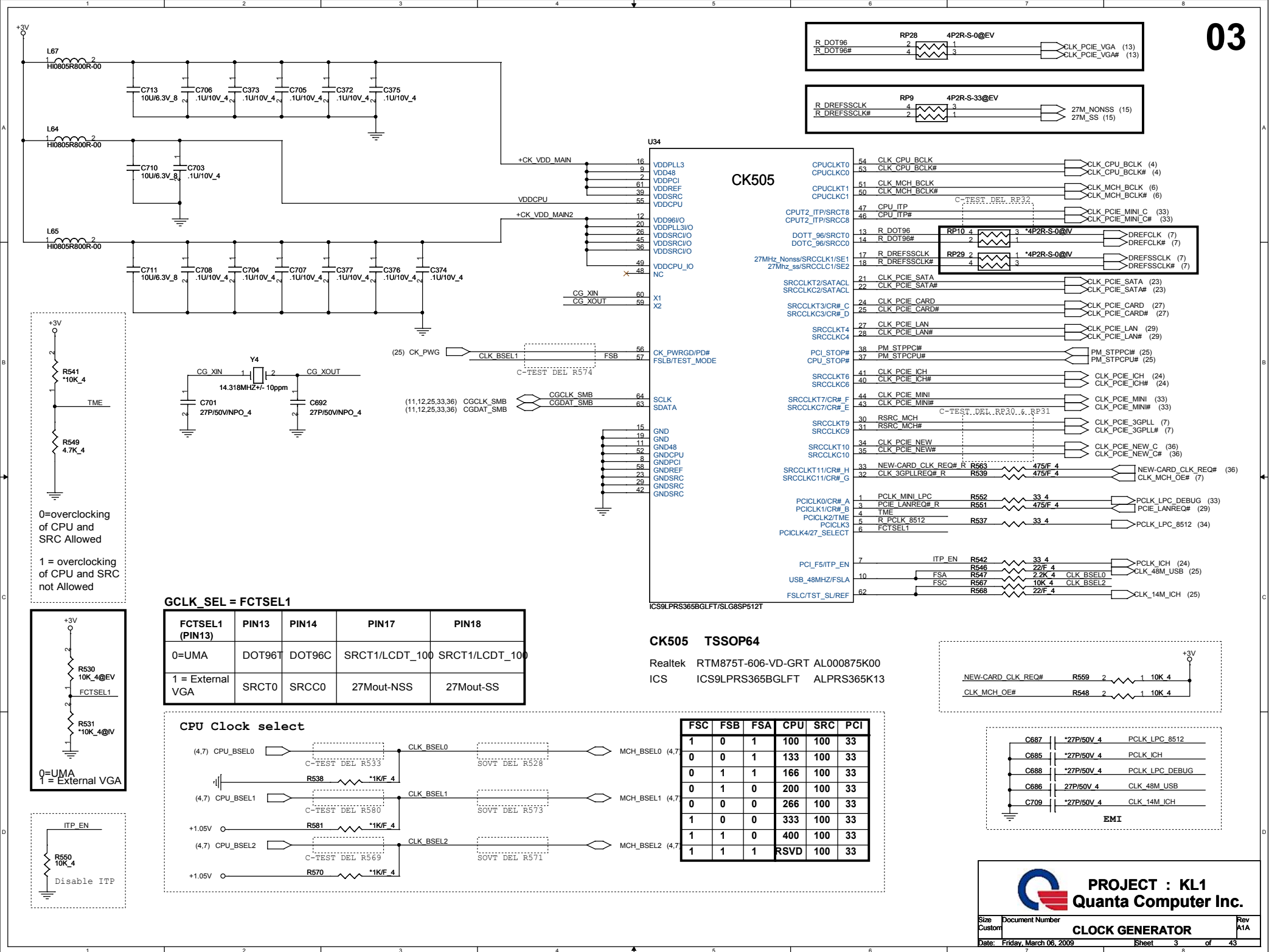
ACIN POWER ON TIMING

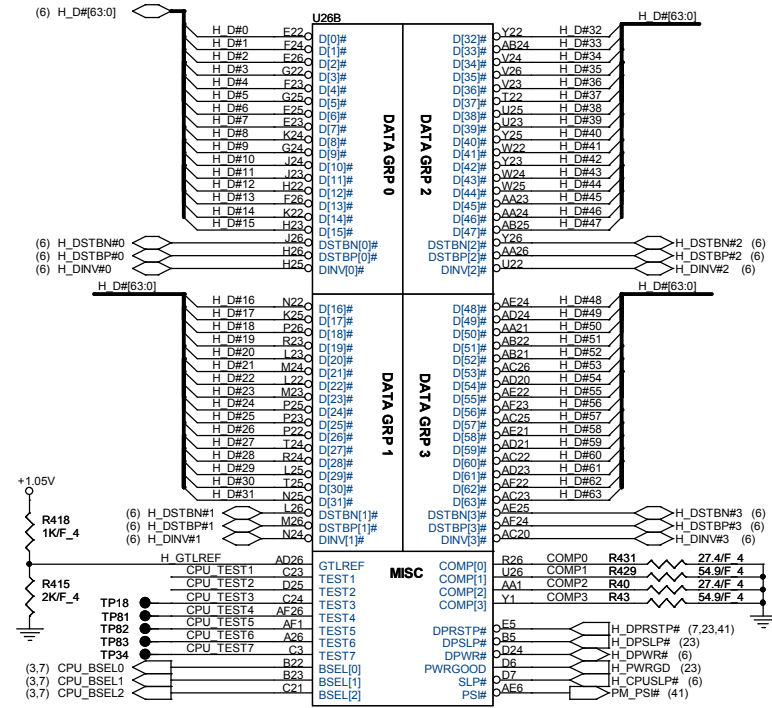




PROJECT : KL1
Quanta Computer Inc.

Size Custom	Document Number	SYSTEM INFORMATION		Rev A1A
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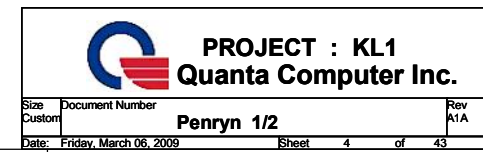


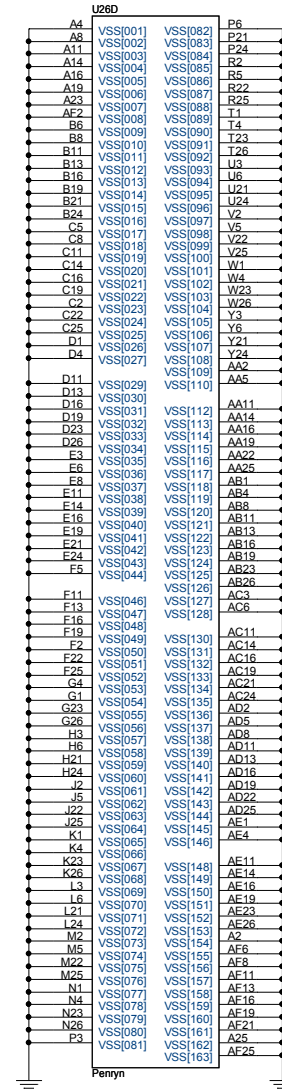
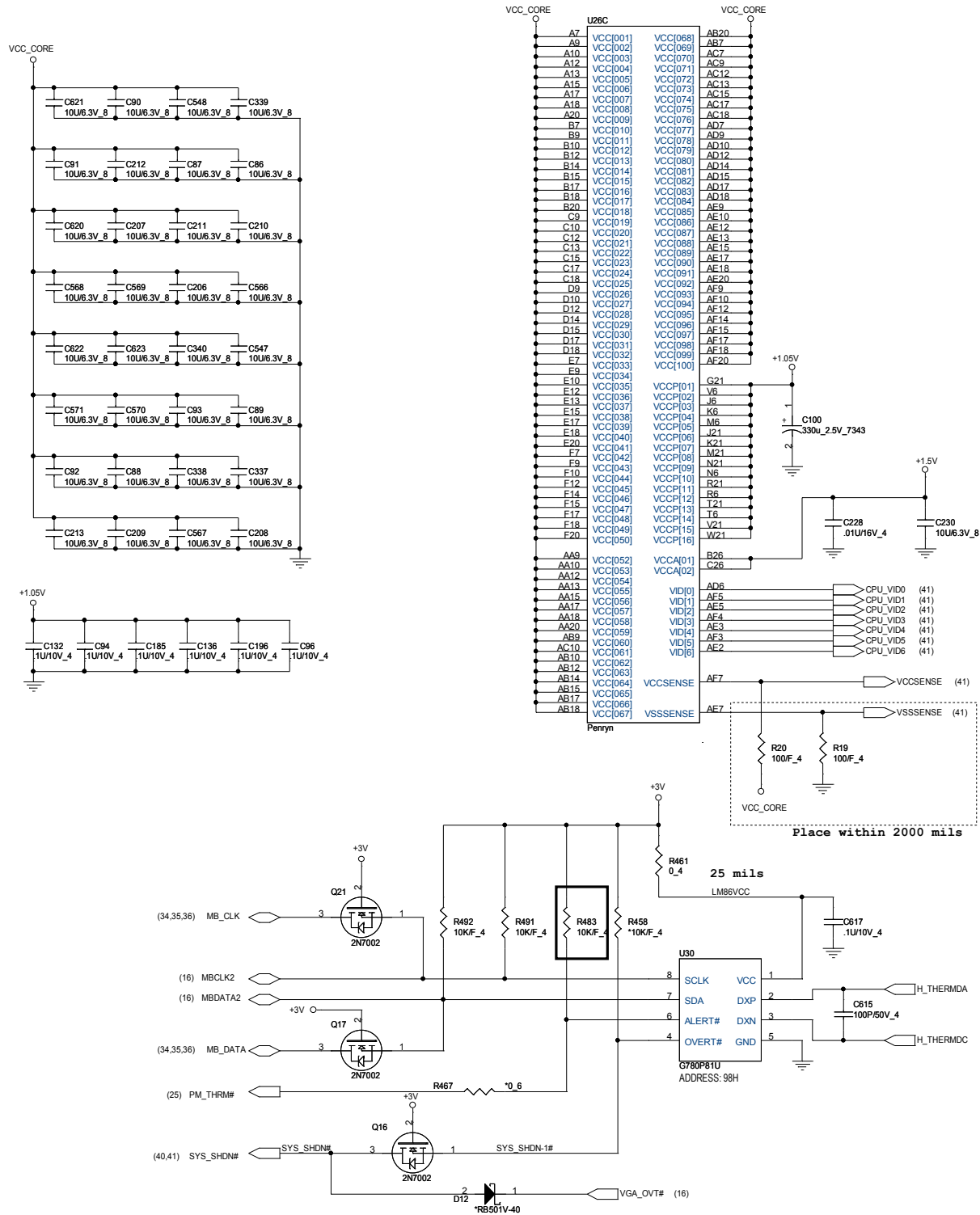


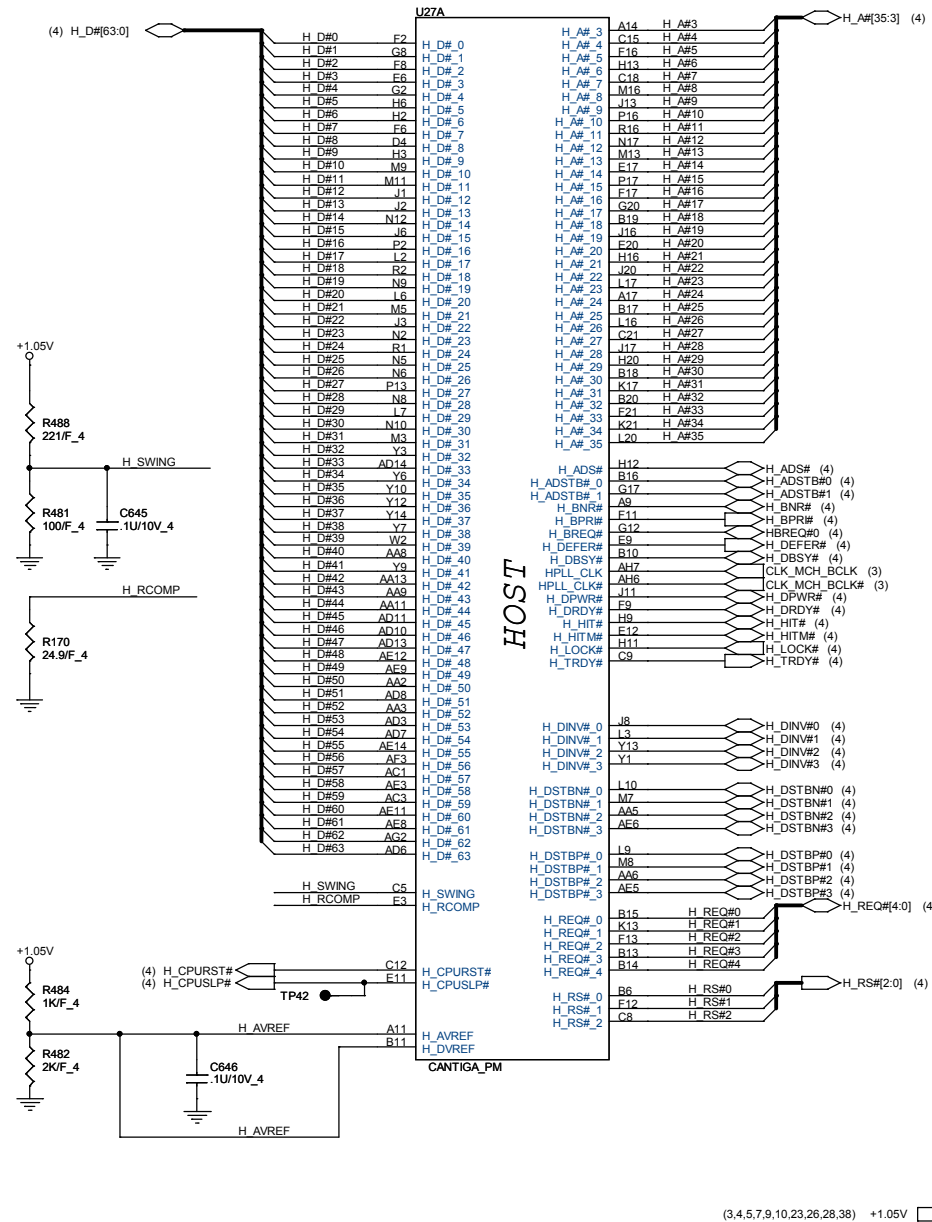
H_PROCHOT# R

Q4
2N7002@NC

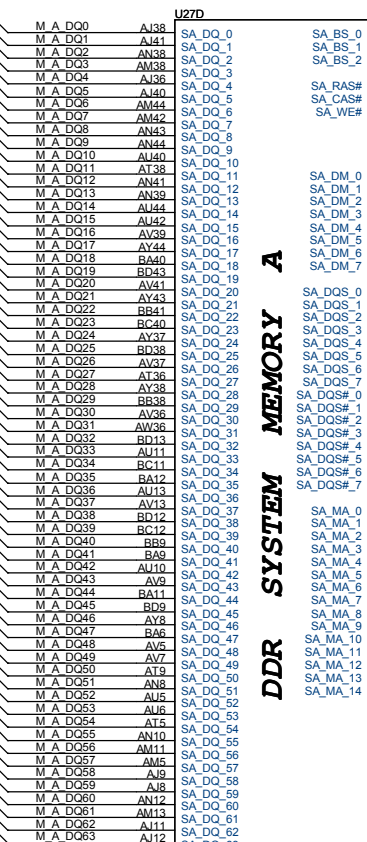
H_PROCHOT# (41)







(11) M_A_DQ[63:0]



CANTIGA_PM

DDR SYSTEM MEMORY A

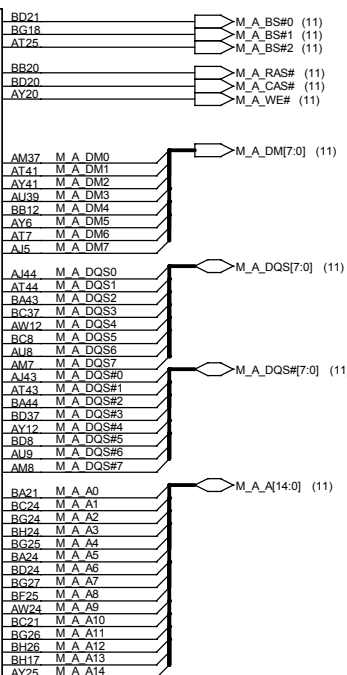
SA_BS_0
SA_BS_1
SA_BS_2

SA_RAS#
SA_CAS#
SA_WE#

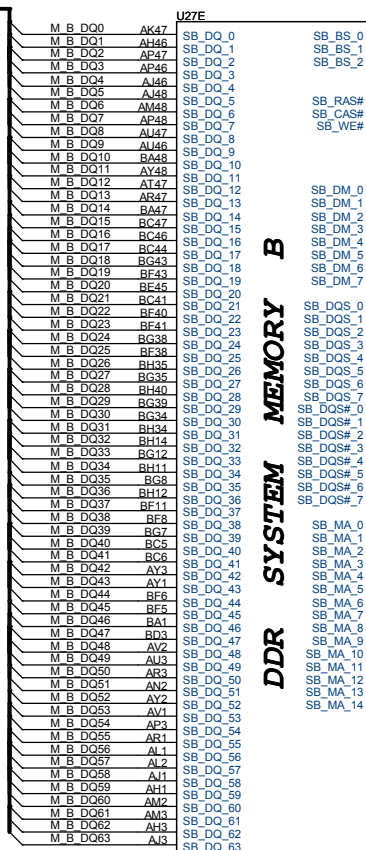
SA_DM_0
SA_DM_1
SA_DM_2
SA_DM_3
SA_DM_4
SA_DM_5
SA_DM_6
SA_DM_7

SA_DQS_0
SA_DQS_1
SA_DQS_2
SA_DQS_3
SA_DQS_4
SA_DQS_5
SA_DQS_6
SA_DQS_7
SA_DQS#_0
SA_DQS#_1
SA_DQS#_2
SA_DQS#_3
SA_DQS#_4
SA_DQS#_5
SA_DQS#_6
SA_DQS#_7

SA_MA_0
SA_MA_1
SA_MA_2
SA_MA_3
SA_MA_4
SA_MA_5
SA_MA_6
SA_MA_7
SA_MA_8
SA_MA_9
SA_MA_10
SA_MA_11
SA_MA_12
SA_MA_13
SA_MA_14



(12) M_B_DQ[63:0]



CANTIGA_PM

DDR SYSTEM MEMORY B

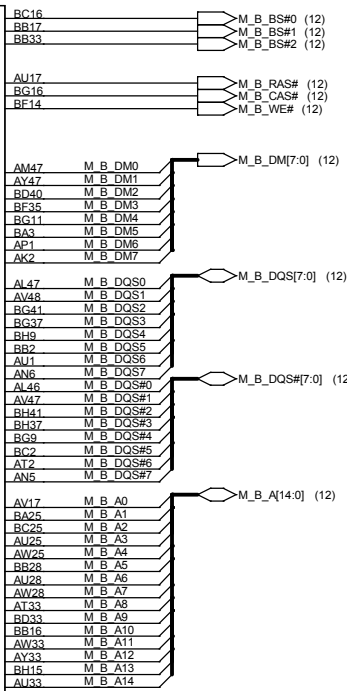
SB_BS_0
SB_BS_1
SB_BS_2

SB_RAS#
SB_CAS#
SB_WE#

SB_DM_0
SB_DM_1
SB_DM_2
SB_DM_3
SB_DM_4
SB_DM_5
SB_DM_6
SB_DM_7

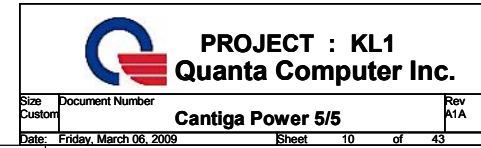
SB_DQS_0
SB_DQS_1
SB_DQS_2
SB_DQS_3
SB_DQS_4
SB_DQS_5
SB_DQS_6
SB_DQS_7
SB_DQS#_0
SB_DQS#_1
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SB_DQS#_3
SB_DQS#_4
SB_DQS#_5
SB_DQS#_6
SB_DQS#_7

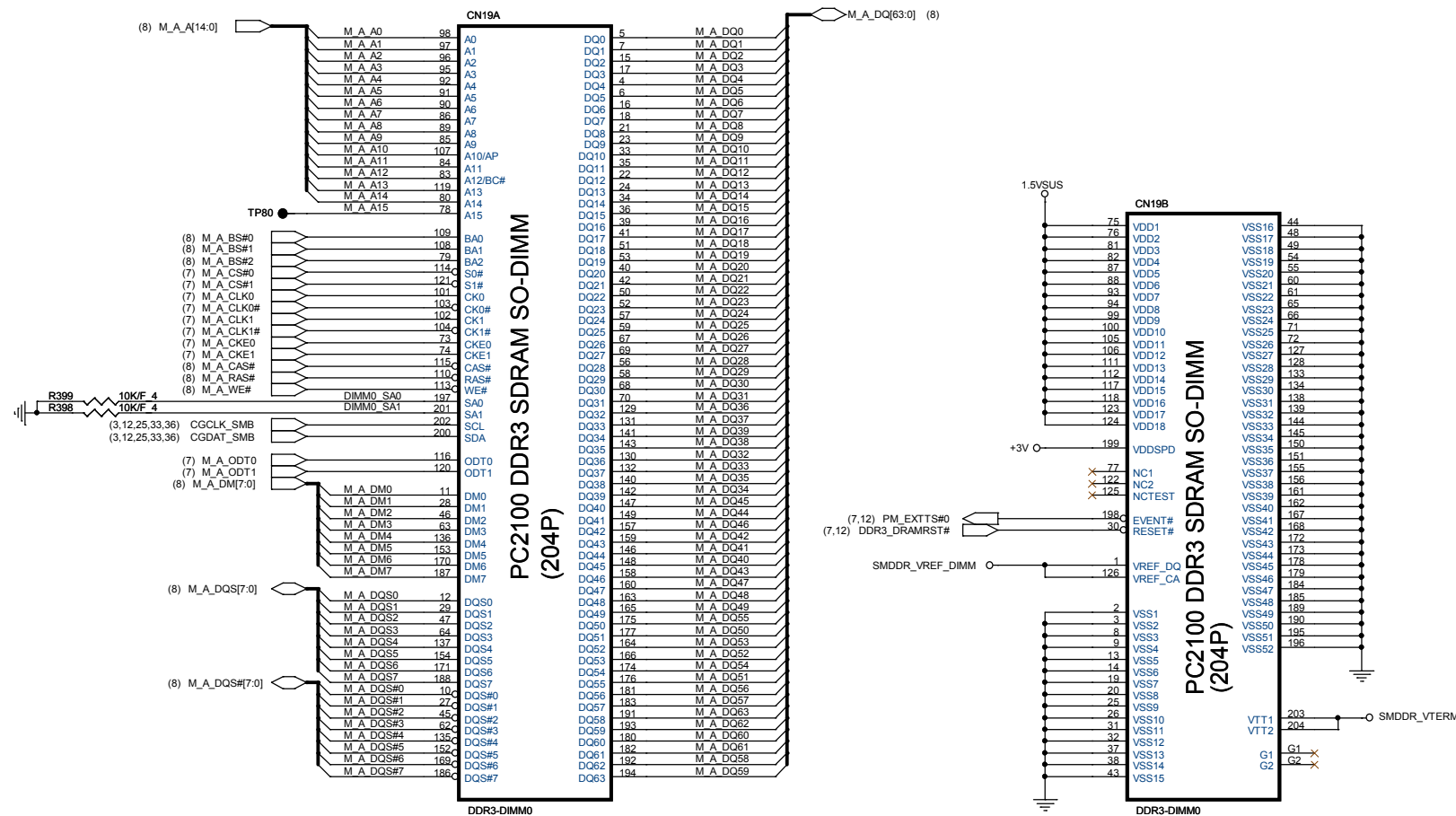
SB_MA_0
SB_MA_1
SB_MA_2
SB_MA_3
SB_MA_4
SB_MA_5
SB_MA_6
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SB_MA_9
SB_MA_10
SB_MA_11
SB_MA_12
SB_MA_13
SB_MA_14



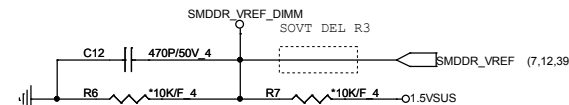
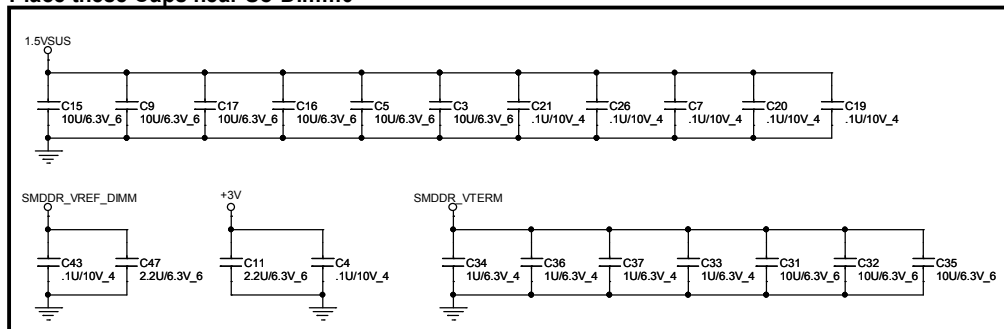
PROJECT : KL1
Quanta Computer Inc.



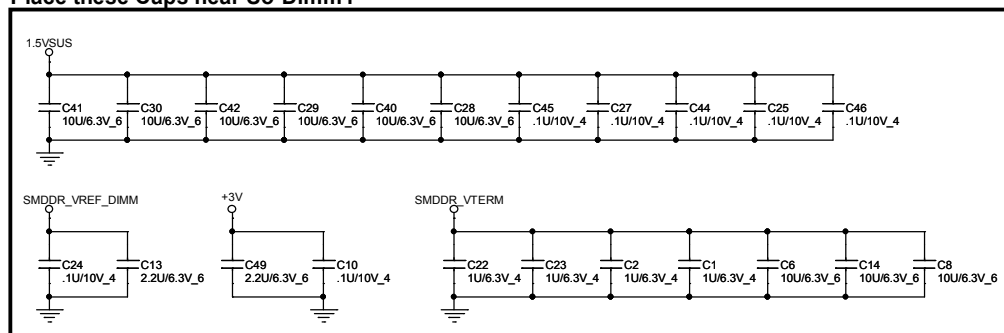




Place these Caps near So-Dimm0



 PROJECT : KL1 Quanta Computer Inc.	
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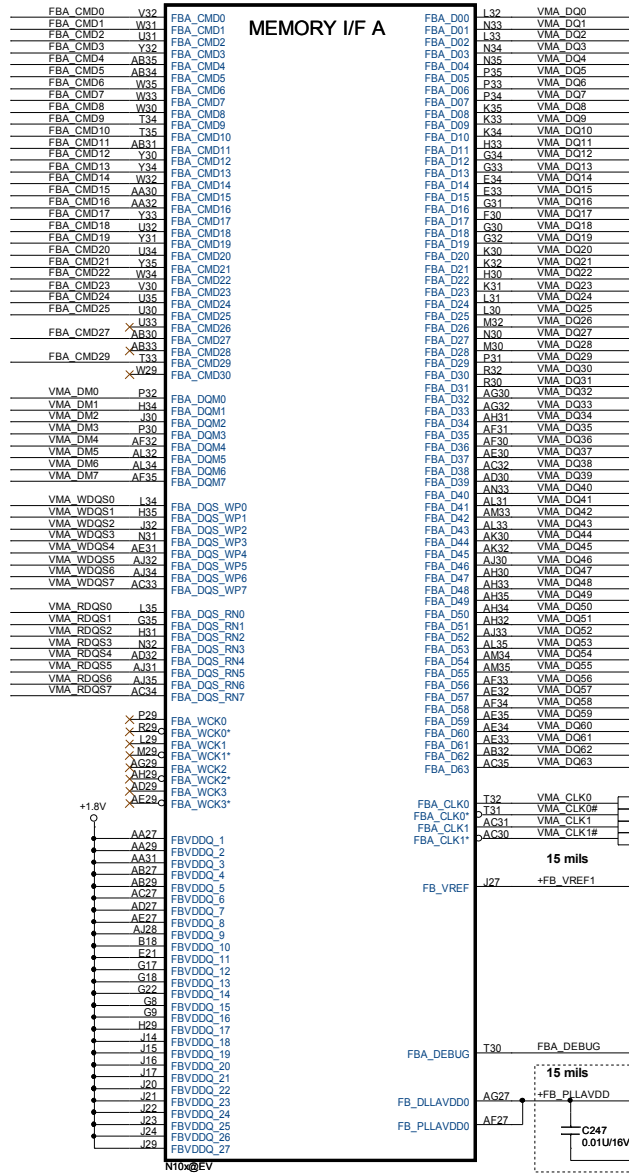


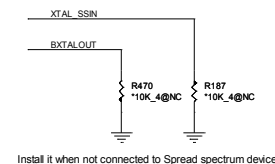
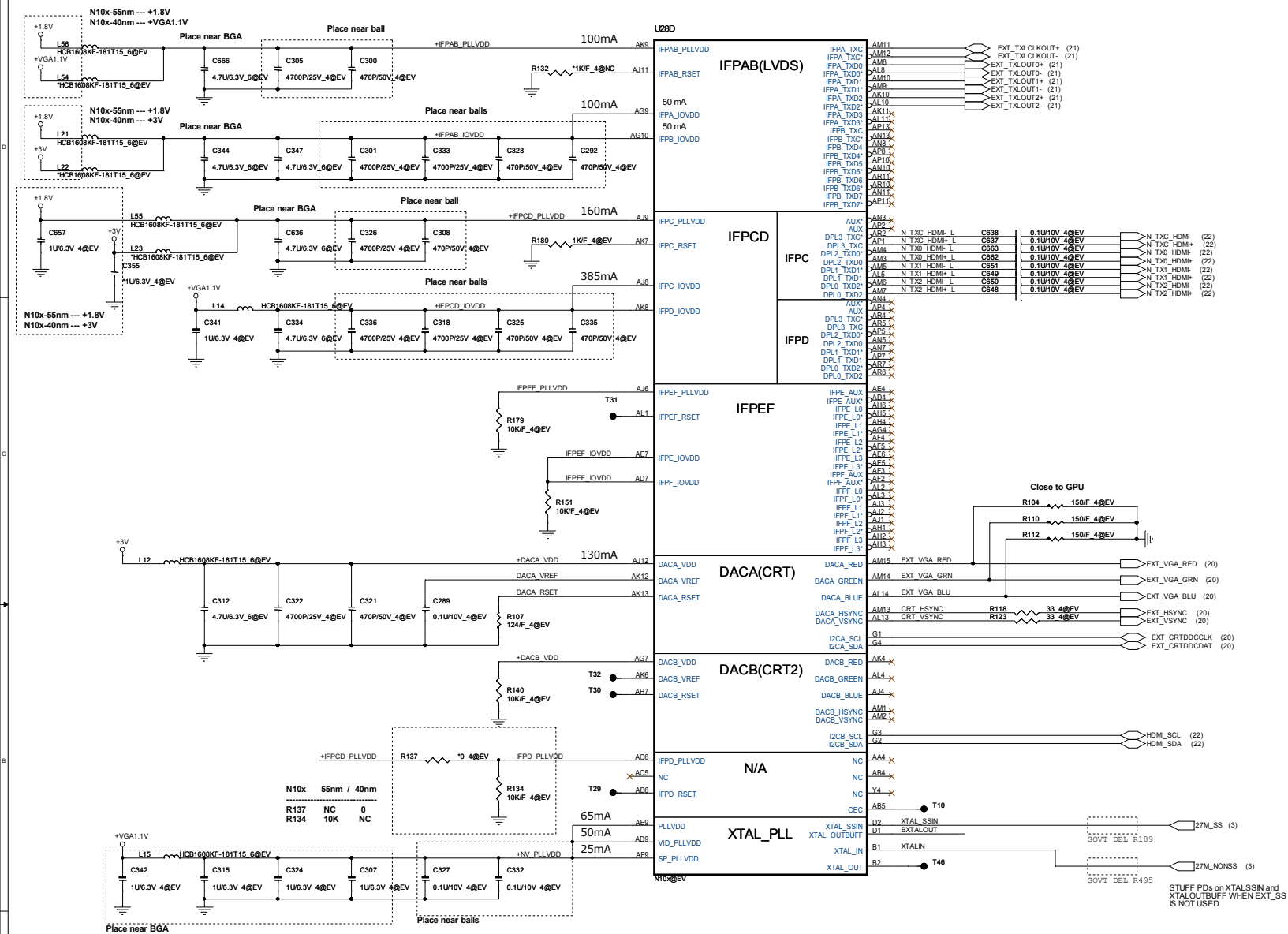


Size Custom:	Document Number NV10X (PCIE I/F) 1/5	Rev A1A
Date:	Friday, March 06, 2009	Sheet 13 of 43

U28B

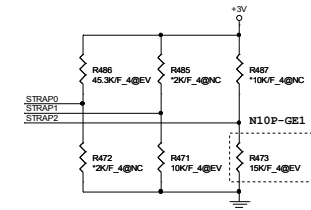
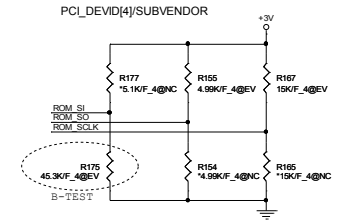
MEMORY I/F A





N10P-GE1 Straps N10M-GS1 Straps GPIO ASSIGNMENTS

GPIO	I/O	ACTIVE	USAGE
0	IN	N/A	PRIMARY DVI HOTPLUG
1	IN	N/A	SECONDARY DVI HOTPLUG
2	OUT	HIGH	PANEL BACKLIGHT PWM
3	OUT	HIGH	PANEL POWER ENABLE
4	OUT	HIGH	PANEL BACKLIGHT ENABLE
5	OUT	N/A	NVVDD VID0
6	OUT	N/A	FBVDD VID0
7	IN	LOW	THERMAL ALERT
8	OUT	LOW	FAN PWM
9	OUT	N/A	FBVREF SELECT
10	OUT	N/A	SLI SYNC0
11	OUT	N/A	AC DETECT
12	IN	LOW	PS CONTROL OR HDMI_CEC
13	OUT	LOW	PS CONTROL OR HDMI_CEC
14	OUT	HIGH	PS CONTROL



N10P-GE1 55nm / 40nm		N10M-GS1 55nm / 40nm	
R167	15K/F	R167	15K/F
R165	NC	R165	NC
R487	NC	R487	NC
R473	15K/F	R473	10K/F

Logical Strap Bit Mapping

PU-VDD	PD
5K	1000
10K	1001
15K	1010
20K	1011
25K	1100
30K	1101
35K	1110
45K	1111

STRAP TABLE

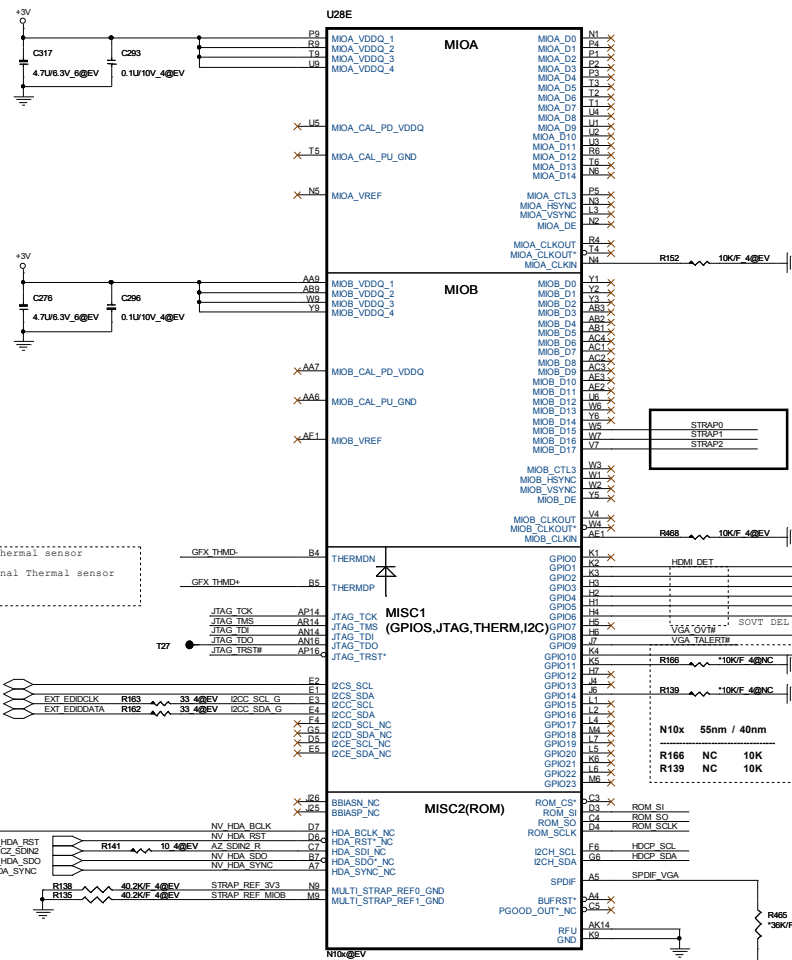
STRAP0: USER[3:0]
 STRAP1: 3GIO PADCFG[3:0]
 STRAP2: PCI DEVID[3:0]
 ROM SCLK: PCI DEVID EXT, SUB VENDOR, SLOT CLK CFG, PEX PLL EN TERM
 ROM SI: RAMCFG[3:0]
 ROM SO: XCLK 417, FB 0 BAR SIZE, SMB ALT ADDR, VGA DEVICE

KL1 STRAP FUNCTION MAPPING

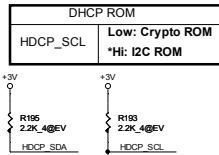
USER[3:0]: 1111
 3GIO PADCFG[3:0]: 0001 NoteBook
 PCI DEVID[3:0]: 0001
 SUB VENDOR: 0 No Vedio BIOS ROM
 SLOT CLK CLG: 1 GPU AND MCH USE COMMON REF CLOCK
 PEX PLL EN TERM: 0 DISABLE PEX PLL TERMINATION
 RAMCFG[3:0]: 0000 AND 0001
 XCLK 417: 1 USING 27MHZ
 FB 0 BAR SIZE:
 SMB ALT ADDR:
 VGA DEVICE:

ROM_SI	RAMCFG LSIT:
PD R175:45K/F	0111 SAMSUNG K4J10324QD-HC12 32M32b * 4PCS
RD R175:30K/F	0101 QIMONDA HYB18H1G321AF-11 32M32b * 2PCS

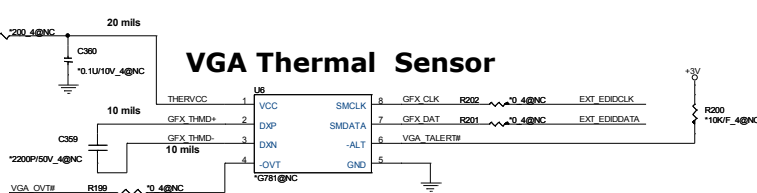
B-TEST



HDCP ROM

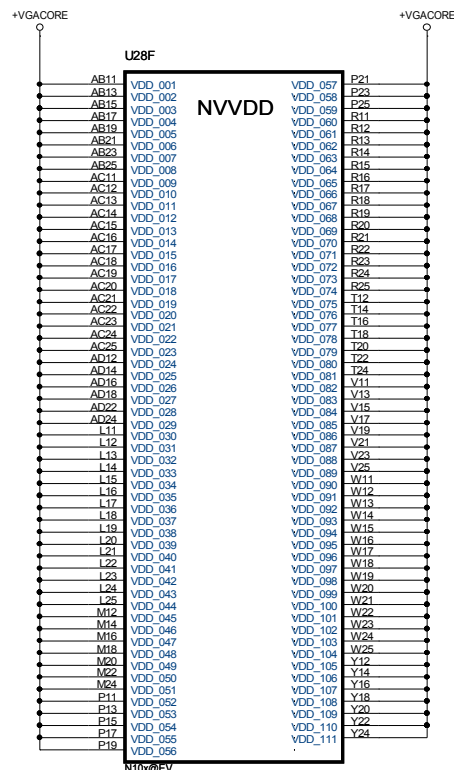


VGA Thermal Sensor

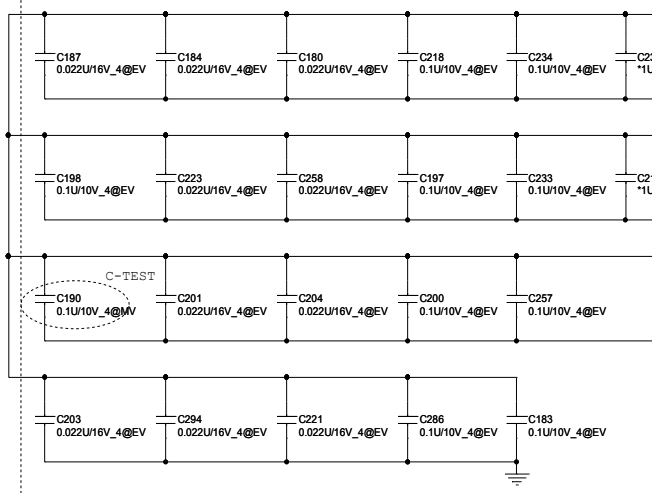


THERMAL TRACE CONSTRAINTS
 Use 10MIL Guard(GND) Trace around THERMDC and THERMOA

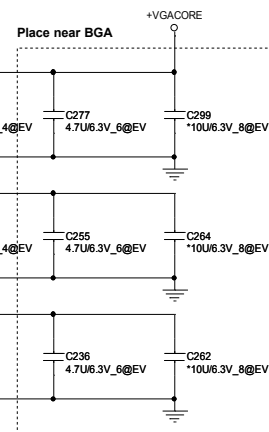
NVVDD Decoupling



Place near balls



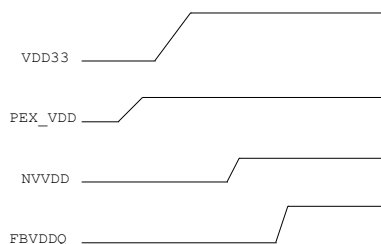
Place near BGA



N10x	55nm	40nm
C187	0.022U	0.01U
C198	0.1U	0.01U
C190	0.1U	0.01U
C235	NC	1U
C217	NC	1U
C277	4.7U	1U
C255	4.7U	4.7U
C236	4.7U	NC
C299	NC	10U
C264	NC	10U
C262	NC	10U

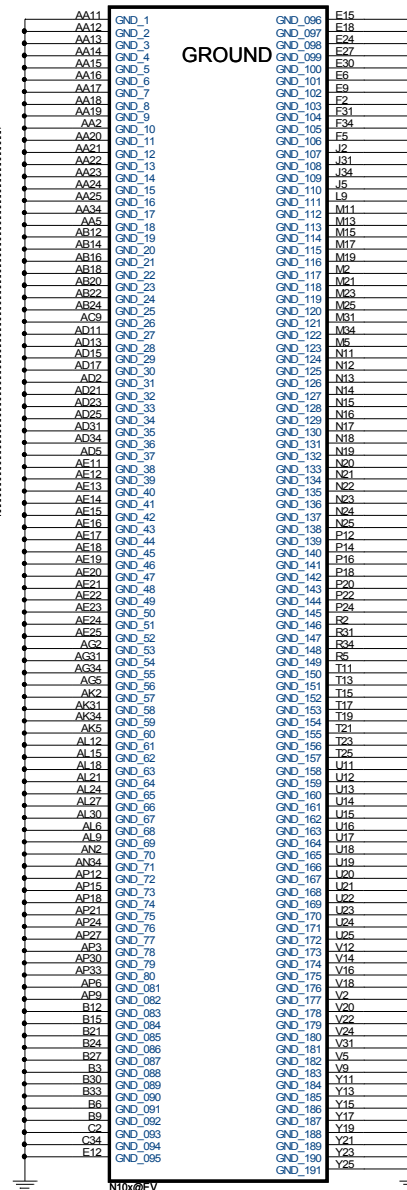
N10P-GE1: +VGACORE +0.90V (Normal)

power up sequence



+VGACORE (37,38,42)

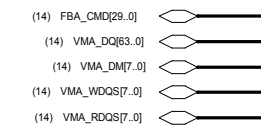
U28G



GROUND



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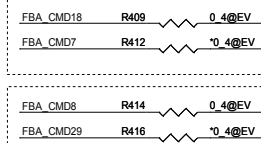
Group 3: D24~D31

Group 0: D0~D7

Group 2: D16~D23

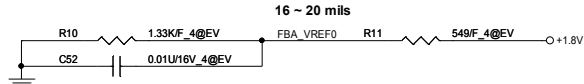
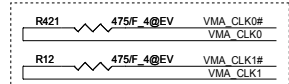
Group 1: D8~D15

N10x	55nm	40nm
DQ	0..31	32..63
QAE0	A4	A4
QAE1	RA5*	RA5*
QAE2	A5	A5
QAE3	BA1	BA1
QAE4	A2	A2
QAE5	A4	A4
QAE6	A3	A3
QAE7	CS1*	CS1*
QAE8	CS0*	CS0*
QAE9	A11	A11
QAE10	CA5*	CA5*
QAE11	WE*	WE*
QAE12	BA0	BA0
QAE13	A5	A5
QAE14	A12	A12
QAE15	RETC0*	RETC0*
QAE16	A7	A7
QAE17	A10	A10
QAE18	CKE	CKE
QAE19	A0	A0
QAE20	A8	A8
QAE21	A6	A6
QAE22	A2	A2
QAE23	A8	A8
QAE24	A3	A3
QAE25	A1	A1
QAE26	A13	A13
QAE27	BA2	BA2
QAE28		
QAE29	CS0*	CS0*
QAE30	QAECS1*	QAECS1*



N10x	55nm	40nm
R409	0	NC
R412	NC	0
R414	0	NC
R416	NC	0

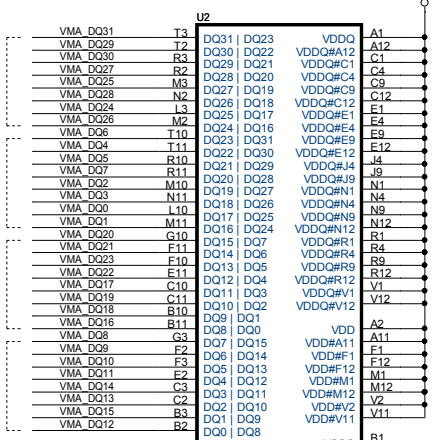
Place near VRAM side



QIMONDA: HYB18H1G321AF-11

SAMSUNG: K4J10324QD-HC12

+1.8V

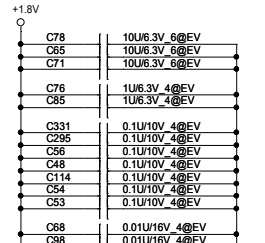
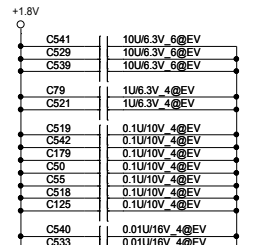
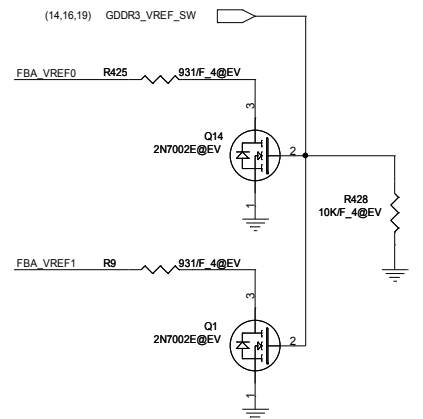
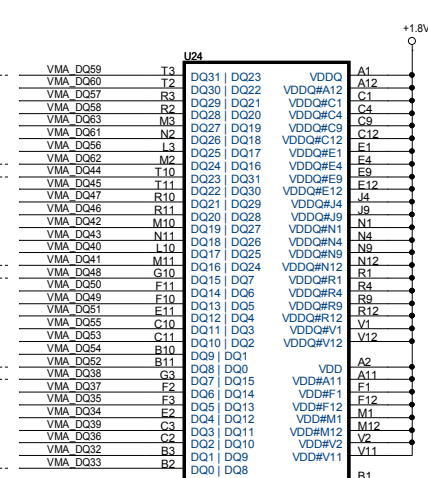


Group 7: D56~D63

Group 5: D40~D47

Group 6: D48~D55

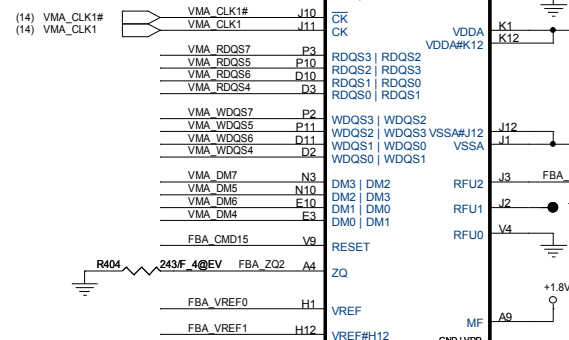
Group 4: D32~D39



Place near U24 VDDQ

(14) VMA_CLK1#

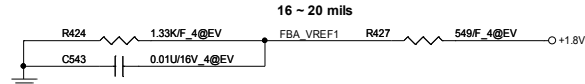
(14) VMA_CLK1



QIMONDA: HYB18H1G321AF-11

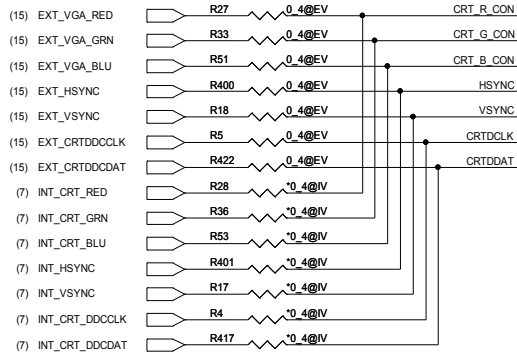
SAMSUNG: K4J10324QD-HC12

+1.8V (14,15,19,28,37,38)



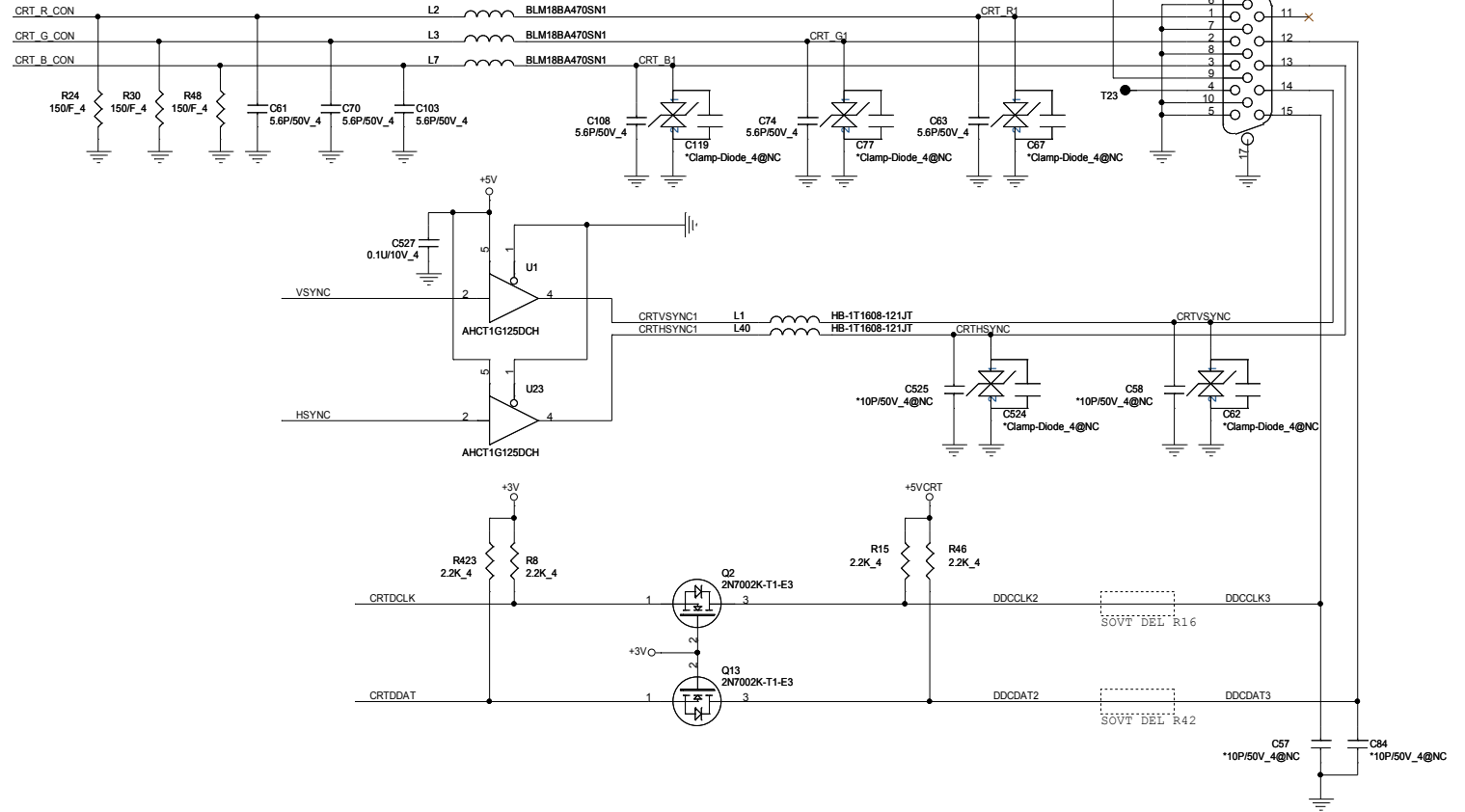


CRT SWITCH



UMA & Discrete setting
LVDS Discrete / UMA

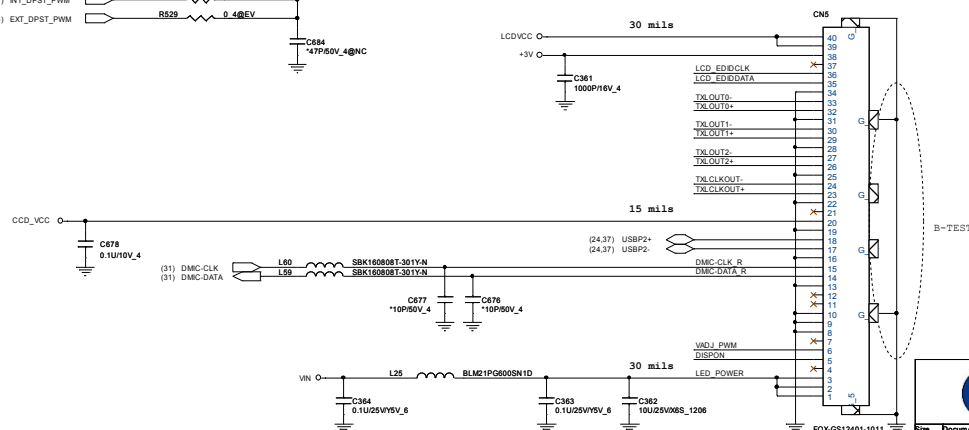
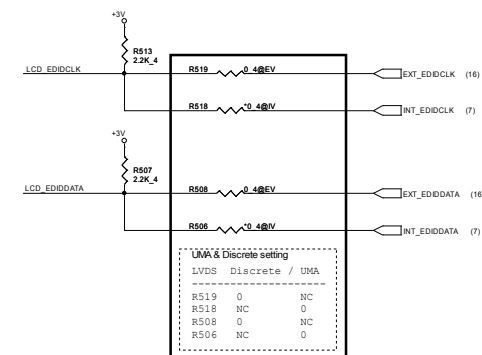
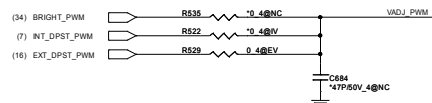
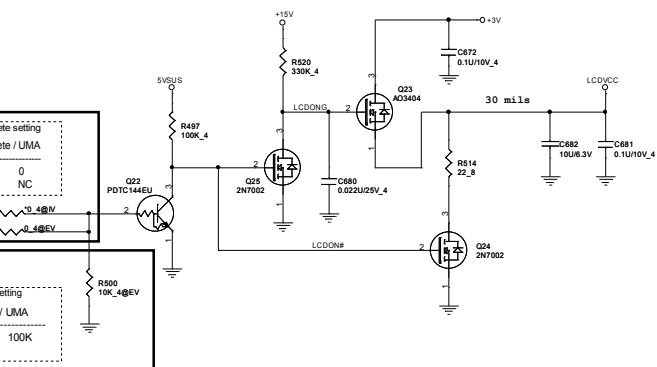
R27	0	NC
R33	0	NC
R51	0	NC
R400	0	NC
R18	0	NC
R5	0	NC
R422	0	NC
R28	NC	0
R36	NC	0
R53	NC	0
R401	NC	0
R17	NC	0
R4	NC	0
R417	NC	0

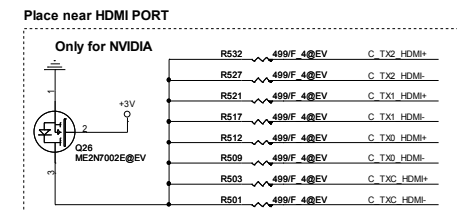
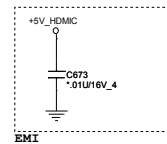
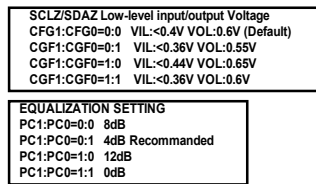


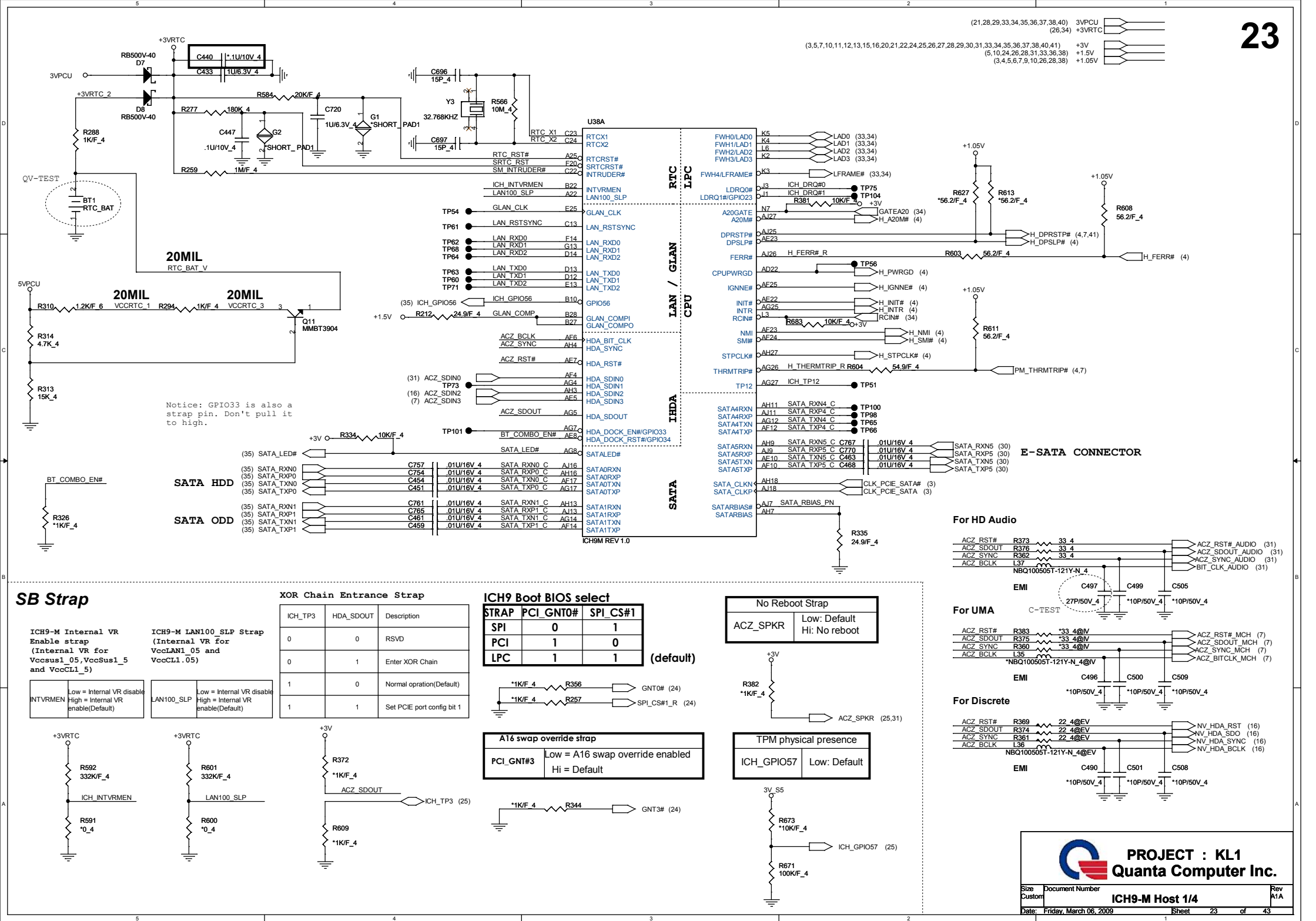
PROJECT : KL1
Quanta Computer Inc.

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CRT CONN







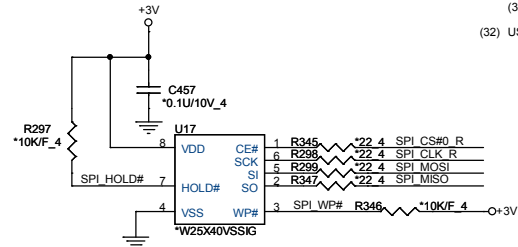
EXPRESS CARD (NEW CARD)

MINI CARD PCI-E (WWAN)

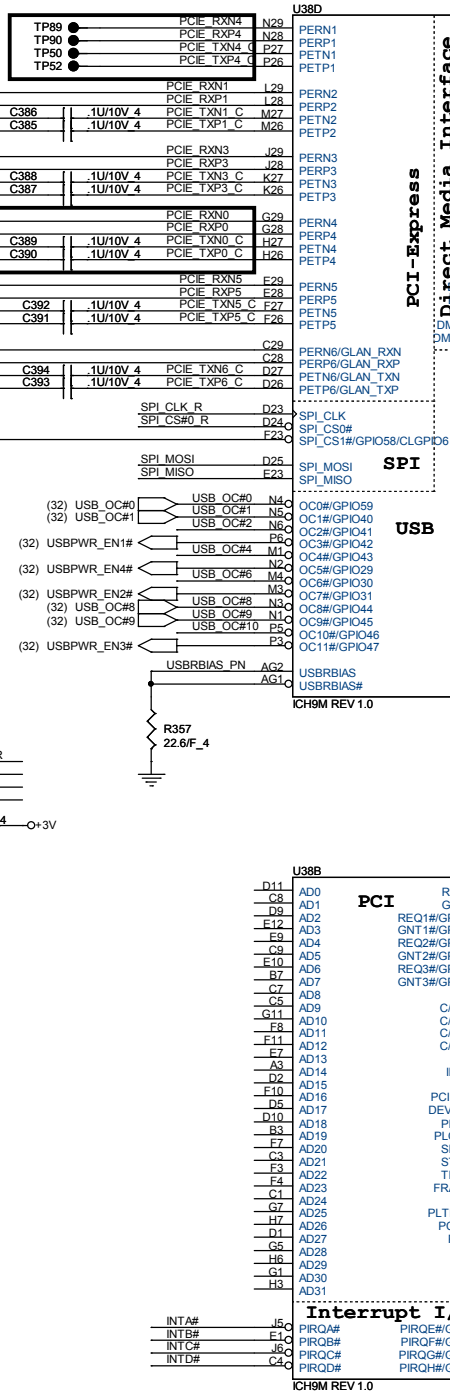
MINI CARD PCI-E (WLAN)

MINI CARD PCI-E (CARD)

PCI-E-LAN



512K byte SPI ROM
For HDCP only



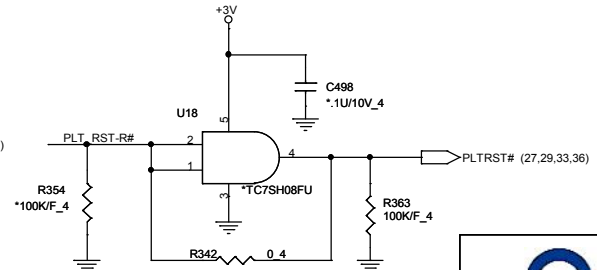
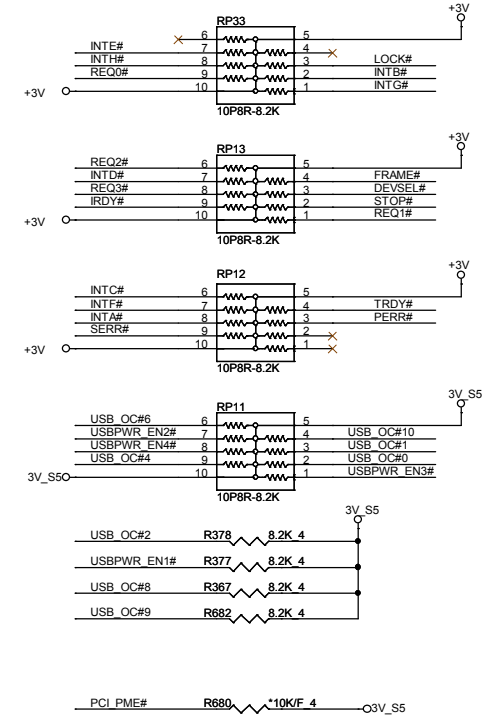
Interrupt I/F

USB Connector
USB Connector
CCD Module

BLUETOOTH

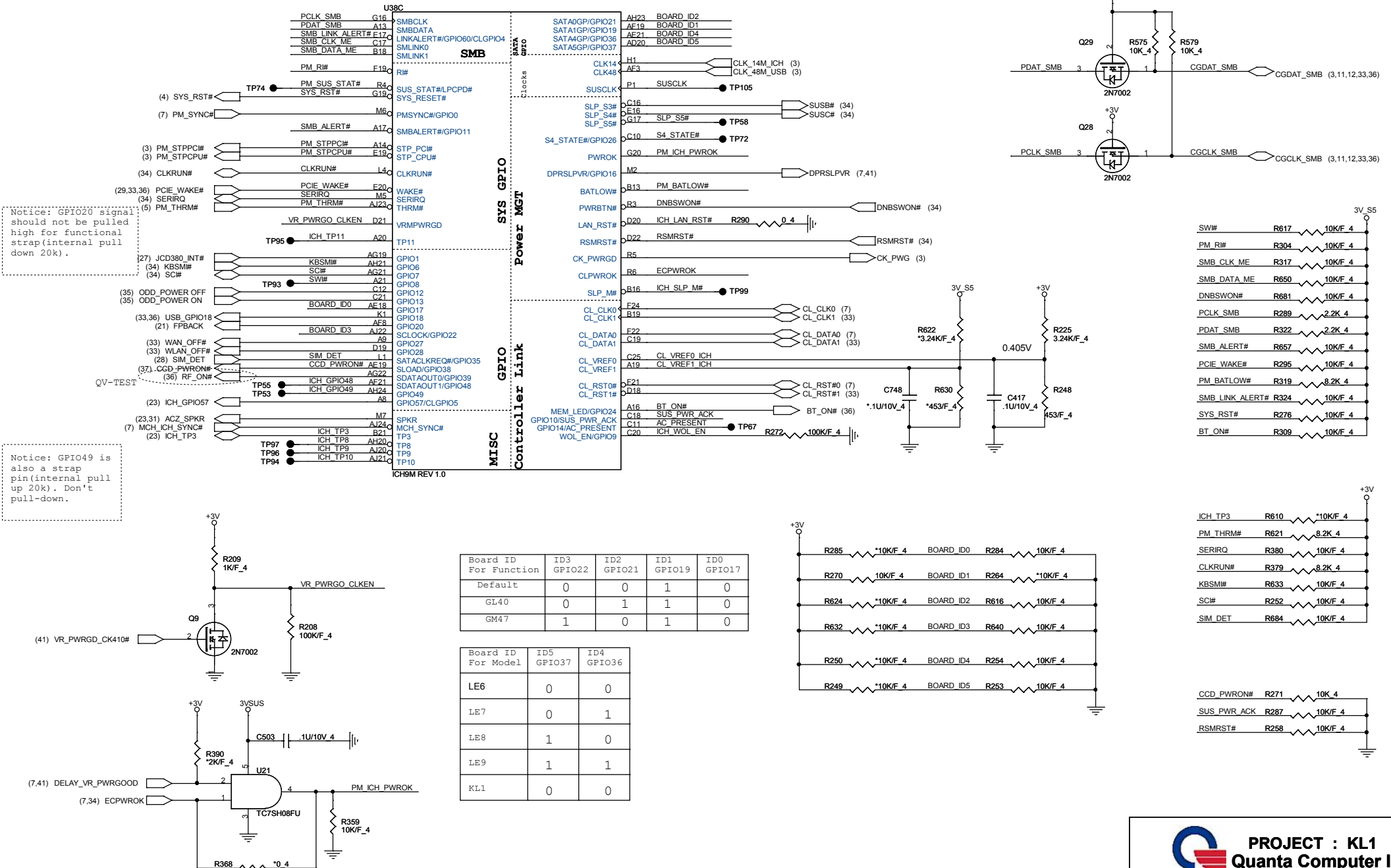
EXPRESS CARD

USB Connector
USB+E-SATA Connector
WWAN Min-Card
WLAN Min-Card

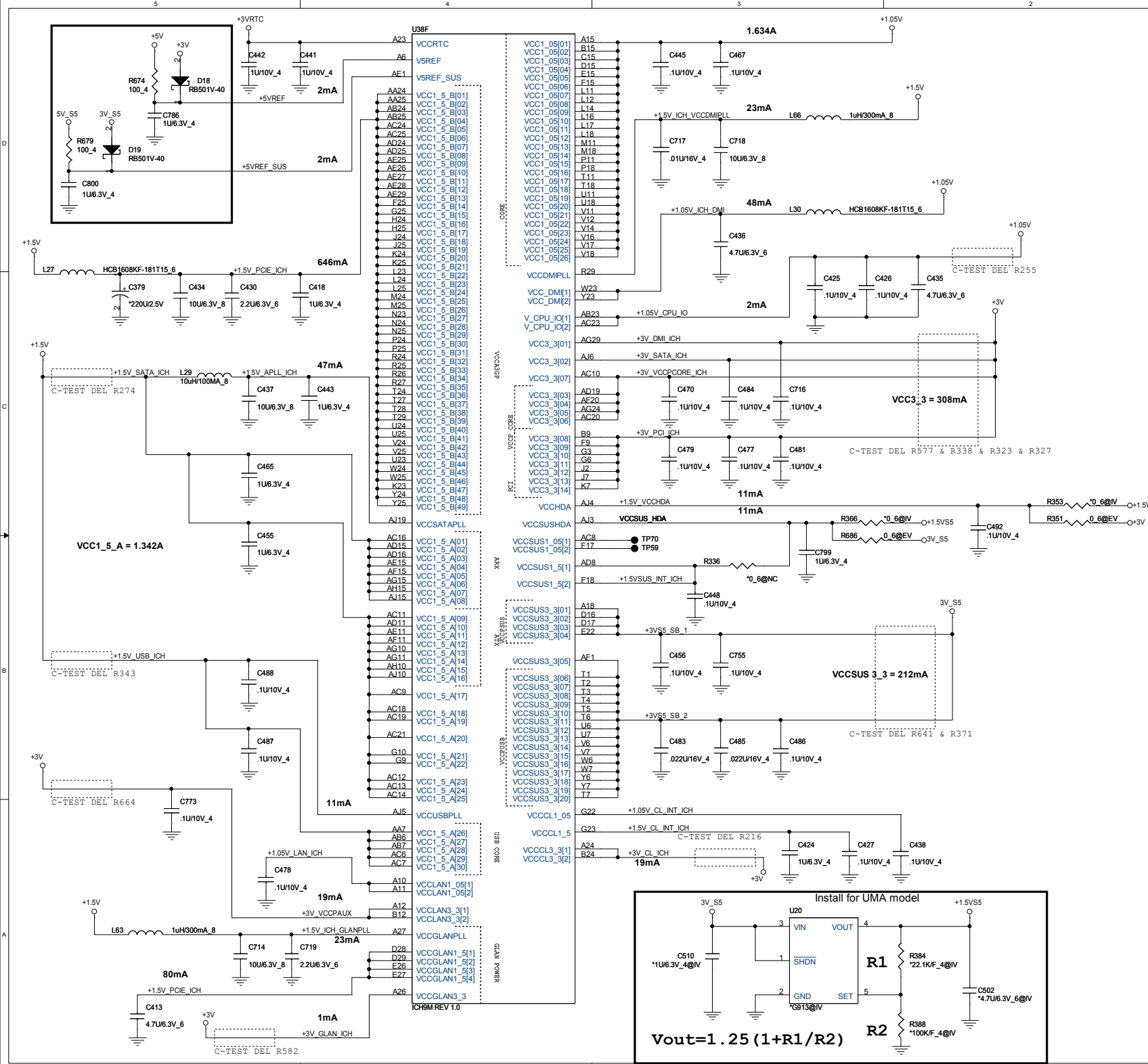


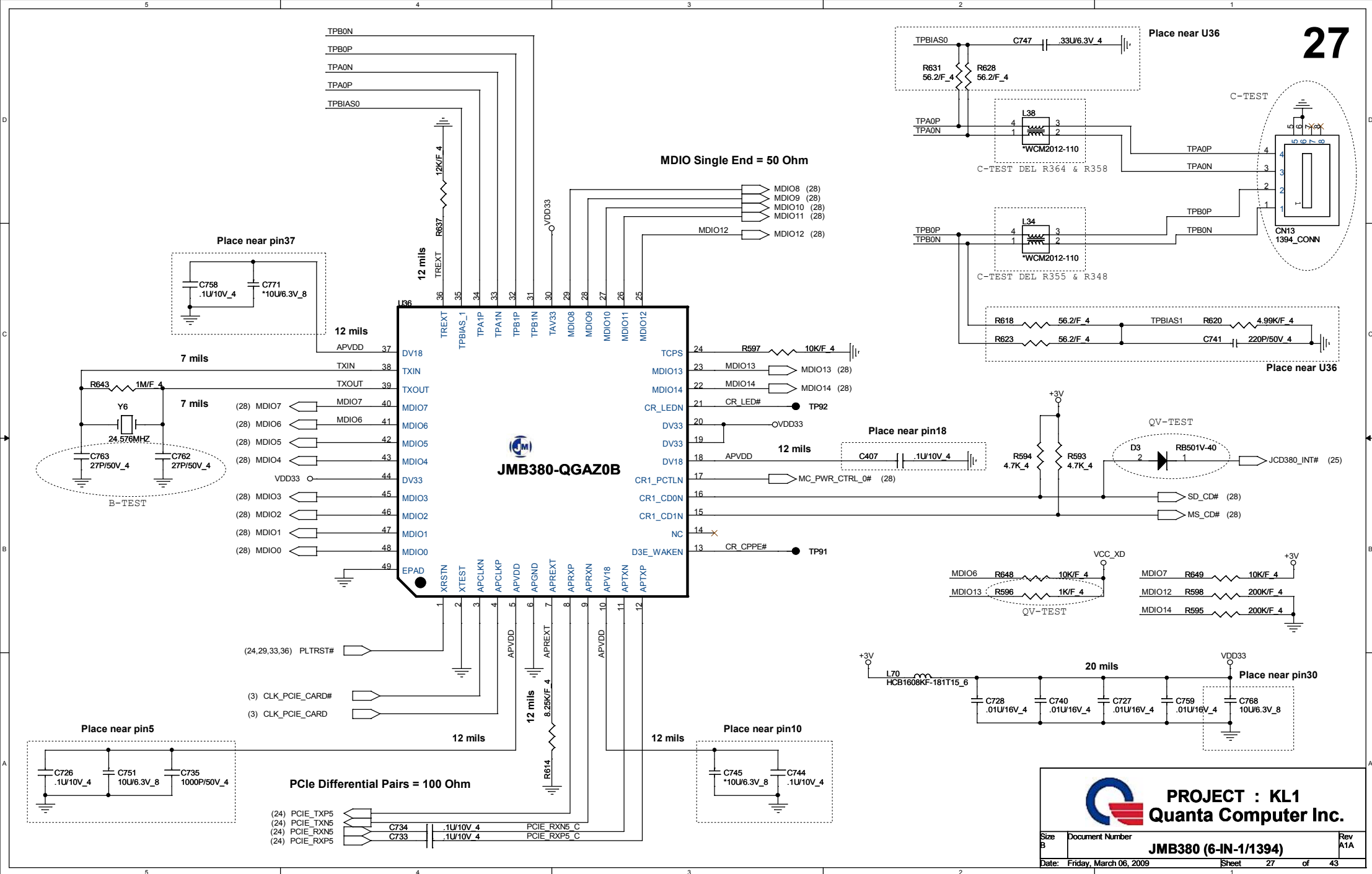
PROJECT : KL1
Quanta Computer Inc.

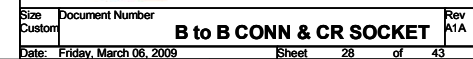
(3,5,7,10,11,12,13,15,16,20,21,22,23,24,26,27,28,29,30,31,33,34,35,36,37,38,40,41) +3V
(23,24,26,38) 3V_S5
(33,34,36,38,39,41,42) 3VSUS

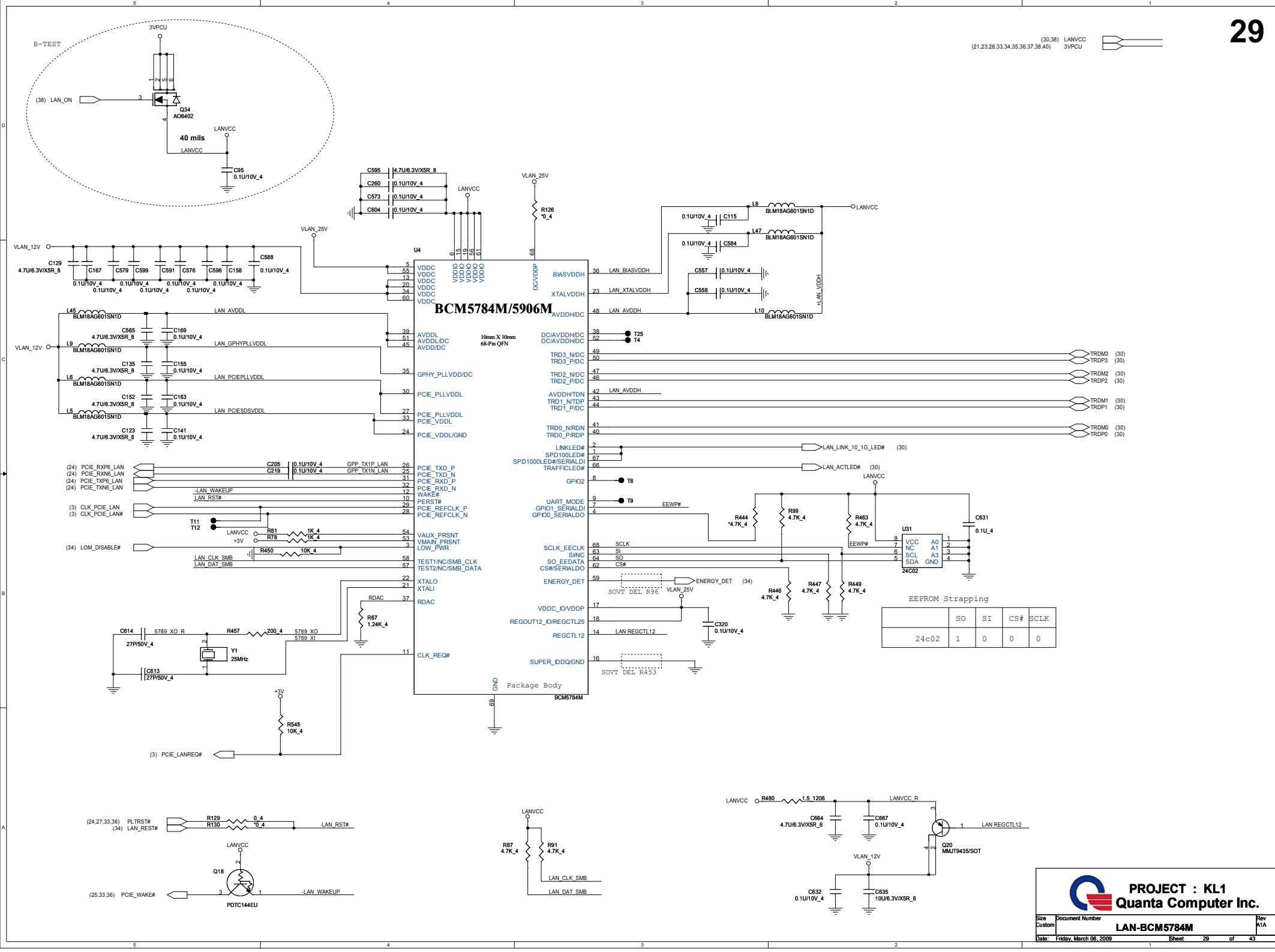
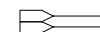


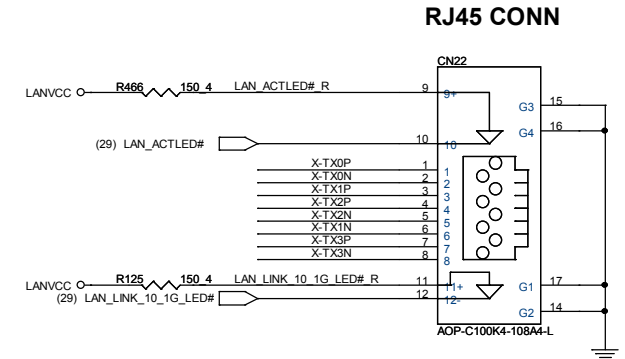
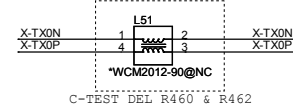
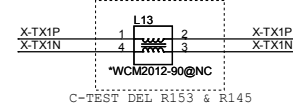
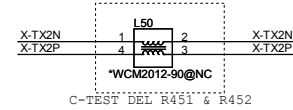
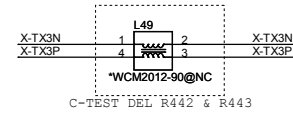
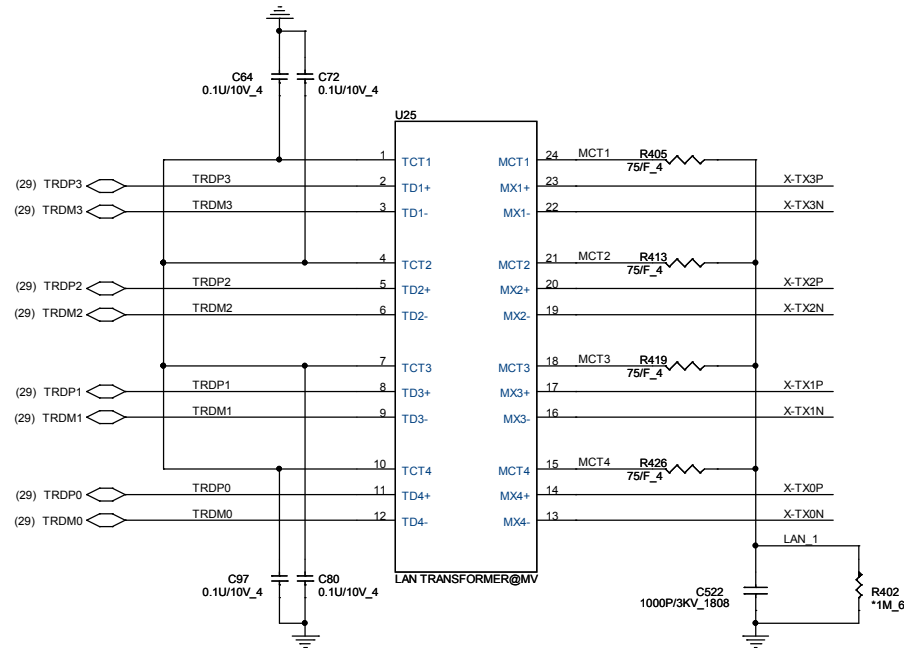
LSBE			
AA26	VSS[001]	VSS[107]	H5
AA27	VSS[002]	VSS[108]	J23
AA3	VSS[003]	VSS[109]	J26
AA6	VSS[004]	VSS[110]	J27
AA7	VSS[005]	VSS[111]	AC22
AA23	VSS[006]	VSS[112]	K28
AB28	VSS[007]	VSS[113]	K29
AB29	VSS[008]	VSS[114]	L13
AB5	VSS[009]	VSS[115]	L2
AC17	VSS[010]	VSS[116]	L26
AC26	VSS[011]	VSS[117]	L27
AC27	VSS[013]	VSS[118]	L5
AD1	VSS[014]	VSS[119]	M7
AD10	VSS[015]	VSS[121]	M13
AD12	VSS[016]	VSS[122]	M14
AD13	VSS[017]	VSS[123]	M15
AD14	VSS[018]	VSS[124]	M16
AD17	VSS[019]	VSS[125]	M17
AD18	VSS[020]	VSS[126]	M23
AD21	VSS[021]	VSS[127]	M28
AD28	VSS[022]	VSS[128]	M29
AD29	VSS[023]	VSS[129]	N11
AD4	VSS[024]	VSS[130]	N12
AD5	VSS[025]	VSS[131]	N13
AD6	VSS[026]	VSS[132]	N14
AD7	VSS[028]	VSS[134]	N15
AD12	VSS[029]	VSS[135]	N16
AE13	VSS[030]	VSS[136]	N17
AE14	VSS[031]	VSS[137]	N18
AE16	VSS[032]	VSS[138]	N26
AE18	VSS[033]	VSS[139]	N27
AE2	VSS[034]	VSS[140]	P12
AE3	VSS[035]	VSS[141]	P14
AE20	VSS[036]	VSS[142]	P15
AE24	VSS[037]	VSS[143]	P16
AE3	VSS[038]	VSS[144]	P17
AE6	VSS[039]	VSS[145]	P2
AE9	VSS[040]	VSS[146]	P23
AE10	VSS[041]	VSS[147]	P28
AE13	VSS[042]	VSS[148]	P29
AE18	VSS[043]	VSS[149]	P4
AE22	VSS[044]	VSS[150]	P7
AE24	VSS[045]	VSS[151]	R11
AE26	VSS[046]	VSS[152]	R12
AE27	VSS[047]	VSS[153]	R13
AE28	VSS[048]	VSS[154]	R14
AE7	VSS[049]	VSS[155]	R15
AE8	VSS[050]	VSS[156]	R16
AE9	VSS[051]	VSS[157]	R17
AG13	VSS[052]	VSS[158]	R18
AG18	VSS[053]	VSS[159]	R19
AG20	VSS[054]	VSS[160]	T12
AG21	VSS[055]	VSS[161]	T18
AG23	VSS[056]	VSS[162]	T13
AG3	VSS[057]	VSS[163]	T14
AG9	VSS[058]	VSS[164]	T16
AH12	VSS[059]	VSS[165]	T17
AH14	VSS[060]	VSS[166]	T23
AH17	VSS[061]	VSS[167]	T26
AH2	VSS[062]	VSS[168]	U12
AH2	VSS[063]	VSS[169]	U13
AH22	VSS[064]	VSS[170]	U14
AH25	VSS[065]	VSS[171]	U15
AH26	VSS[066]	VSS[172]	U16
AH5	VSS[067]	VSS[173]	U17
AH8	VSS[068]	VSS[174]	AD23
A112	VSS[069]	VSS[175]	U26
A14	VSS[070]	VSS[176]	U27
A17	VSS[071]	VSS[177]	U3
B1	VSS[072]	VSS[178]	U7
B11	VSS[073]	VSS[179]	V13
B14	VSS[074]	VSS[180]	V15
B17	VSS[075]	VSS[181]	V18
B2	VSS[076]	VSS[182]	V23
B20	VSS[077]	VSS[183]	V28
B23	VSS[078]	VSS[184]	V4
B5	VSS[079]	VSS[185]	V5
B8	VSS[080]	VSS[186]	W2
B8	VSS[081]	VSS[187]	W26
C26	VSS[082]	VSS[188]	W27
E11	VSS[083]	VSS[189]	Y1
E14	VSS[084]	VSS[190]	Y2
E18	VSS[085]	VSS[191]	Y18
F18	VSS[086]	VSS[192]	Y29
F21	VSS[087]	VSS[193]	Y4
F21	VSS[088]	VSS[194]	Y5
E24	VSS[089]	VSS[195]	AG28
E5	VSS[090]	VSS[196]	AH6
E8	VSS[091]	VSS[197]	AE2
F18	VSS[092]	VSS[198]	B25
F28	VSS[093]		A1
F29	VSS[094]	VSS NCTF01	A2
G12	VSS[095]	VSS NCTF02	A28
G14	VSS[096]	VSS NCTF03	A29
G21	VSS[097]	VSS NCTF04	AH19
G24	VSS[098]	VSS NCTF05	AH29
G26	VSS[099]	VSS NCTF06	A12
G27	VSS[100]	VSS NCTF07	A28
G2	VSS[101]	VSS NCTF08	B1
H2	VSS[102]	VSS NCTF09	AJ29
H23	VSS[103]	VSS NCTF10	B2
H28	VSS[104]	VSS NCTF11	B29
H29	VSS[105]	VSS NCTF12	B1



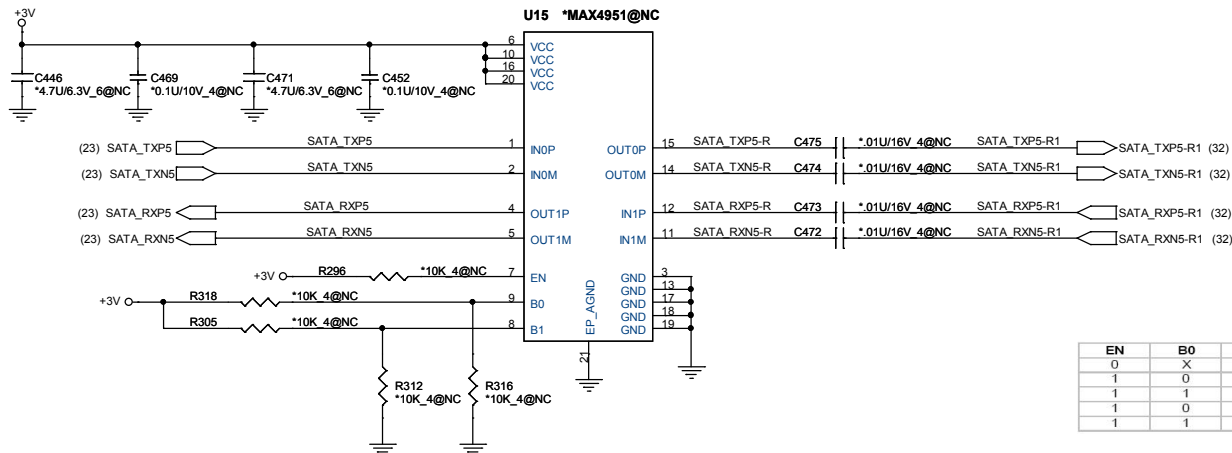
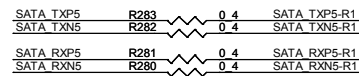




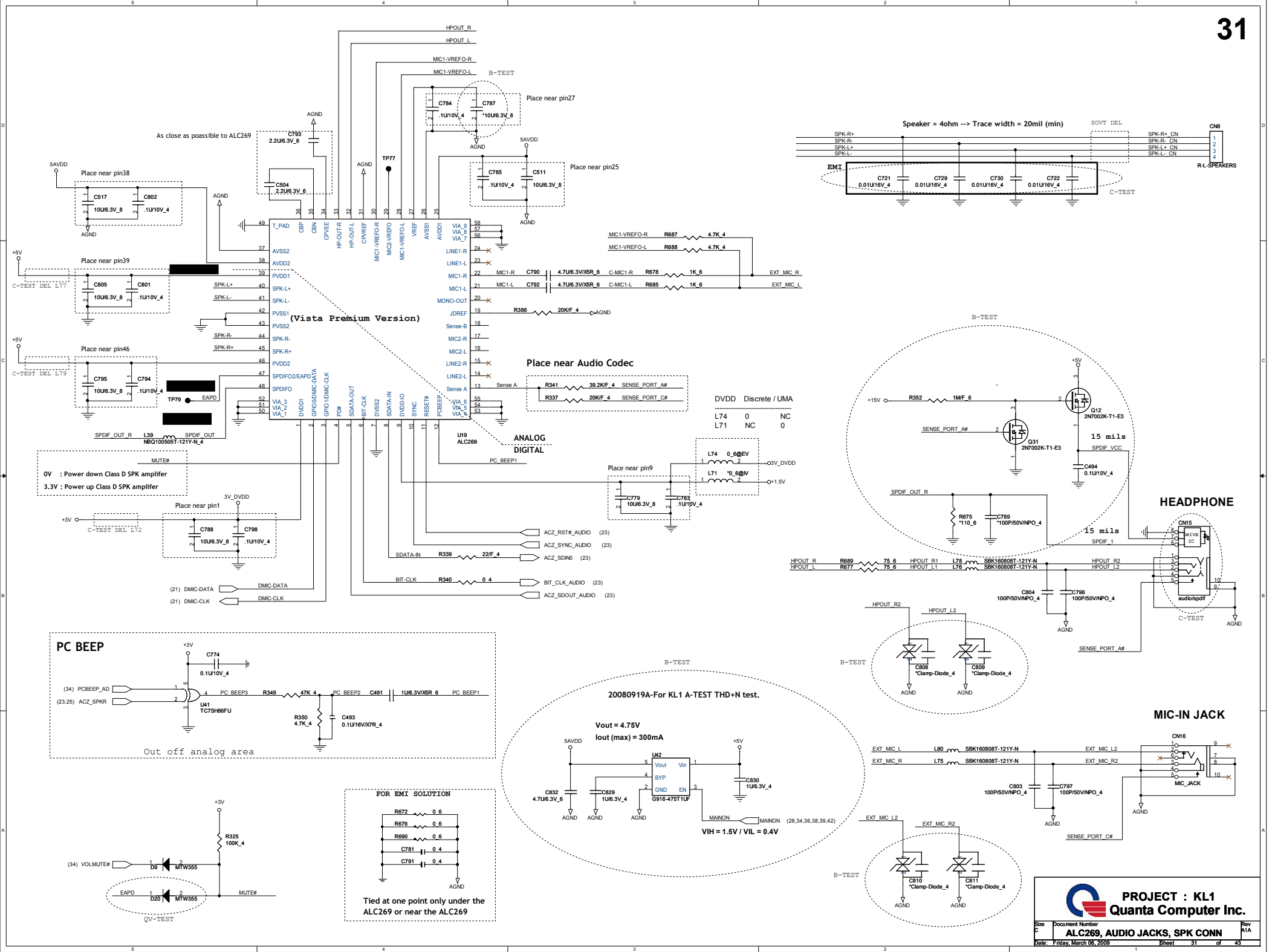




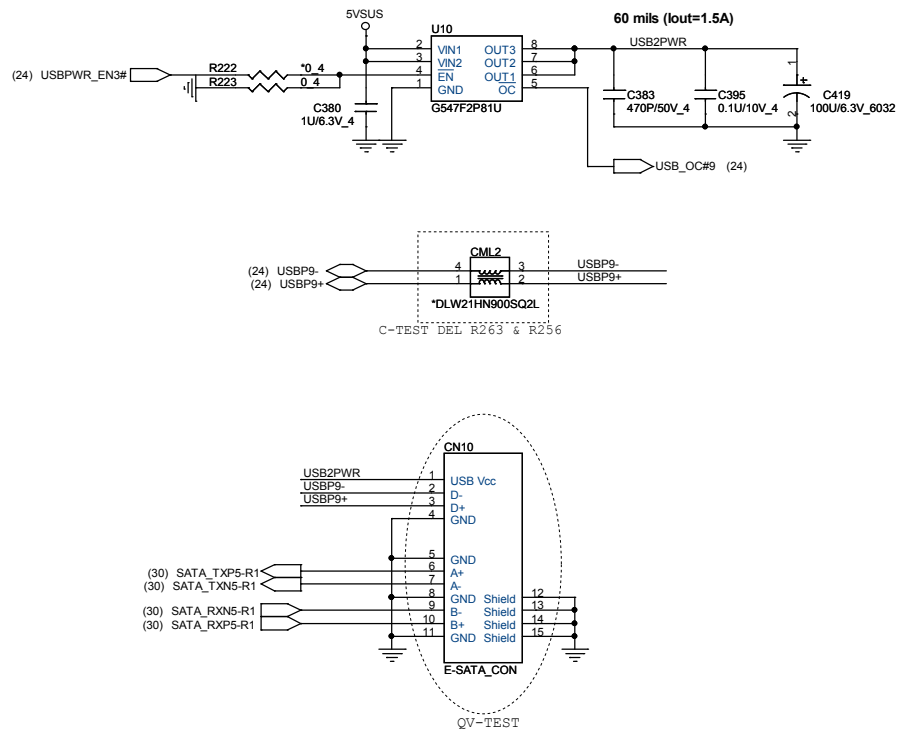
E-SATA RE-DRIVER



EN	B0	B1	FUNCTION
0	X	X	Standby
1	0	0	Standard SATA Output
1	1	0	Ch 0 Boost Output
1	0	1	Ch 1 Boost Output
1	1	1	Ch 0.1 Boost Output

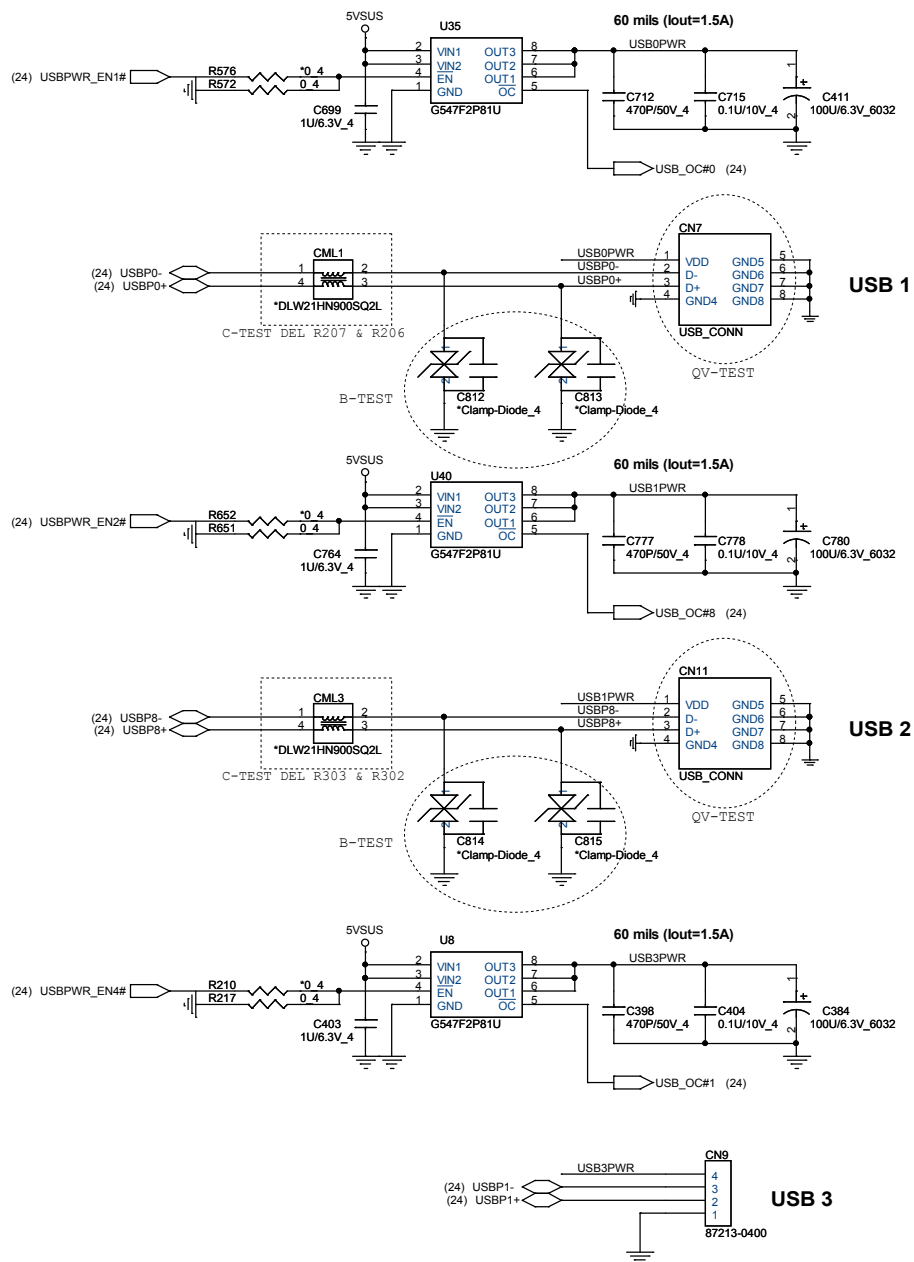


USB + eSATA CONNECTOR



USBX3

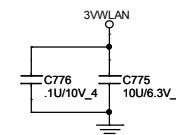
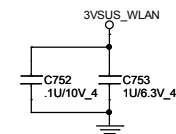
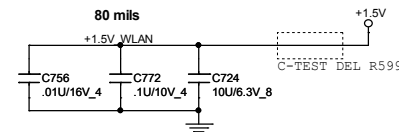
32



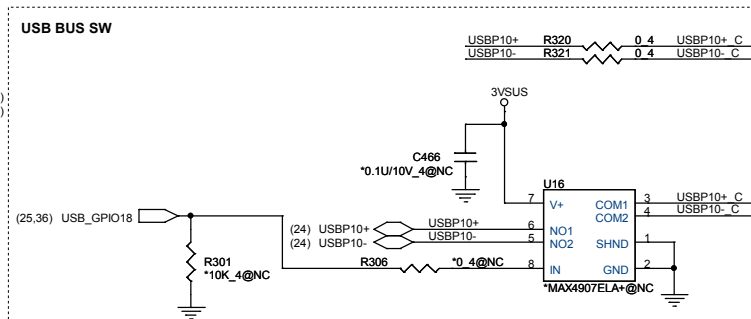
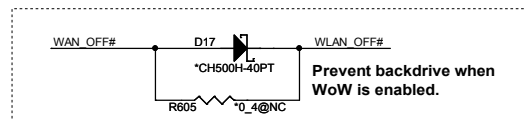
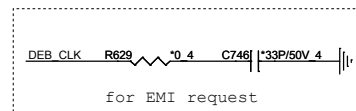
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Size Custom	Document Number USBX3, USB+E-SATA CONN	R A
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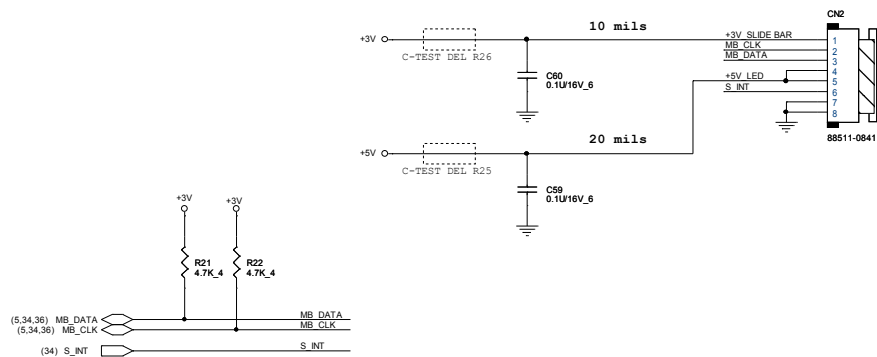


```
INTEL WLAN
CARD PIN 20
W_DISABLE#
have
internal
pull-up 110k
ohm
```

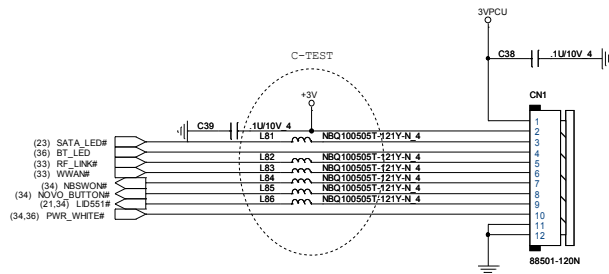


PROJECT : KL1
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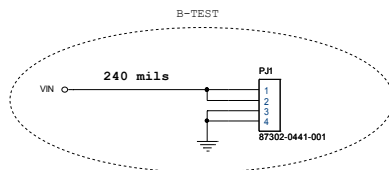
SLIDE BAR CONN



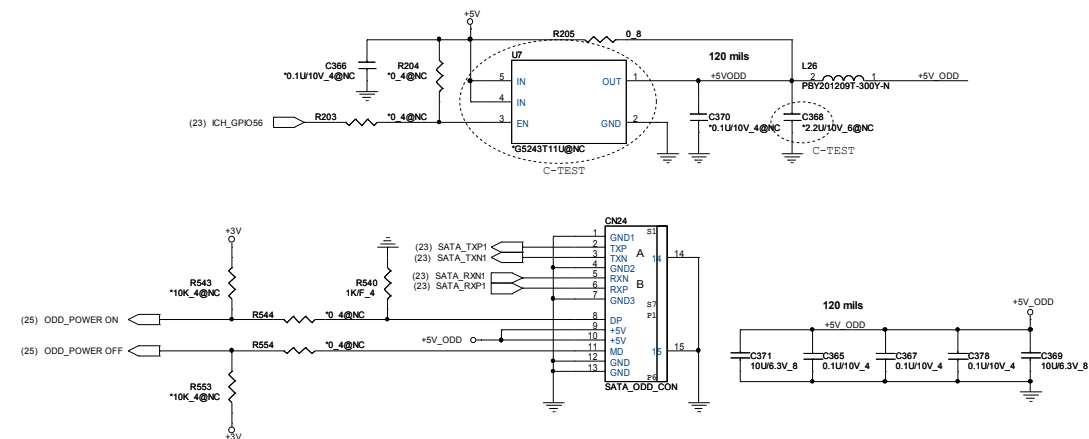
POWER BUTTON/B CONN



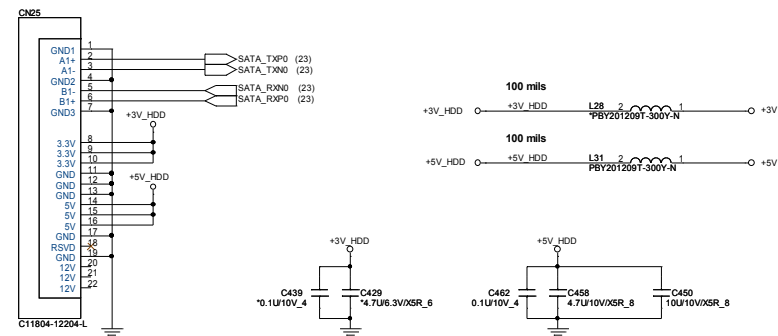
VIN CABLE CONN



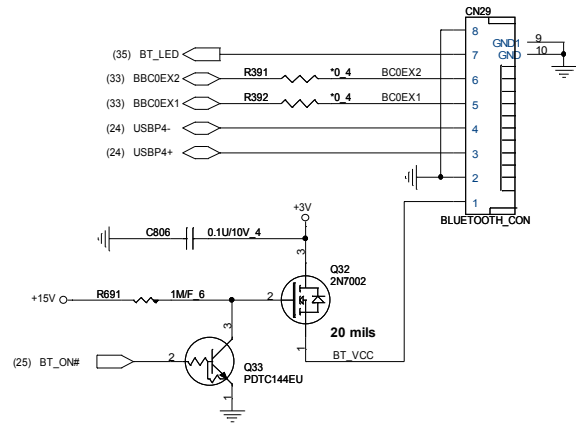
SATA CD-ROM



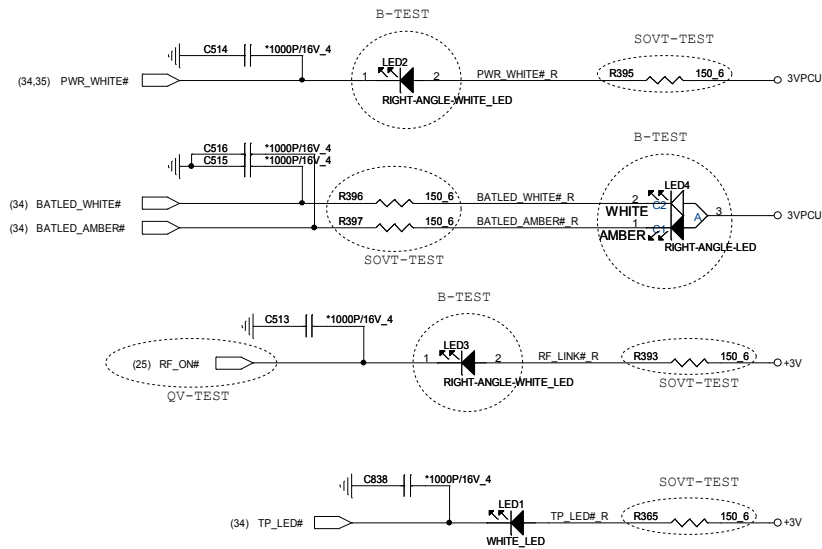
SATA-HDD CONNECTOR



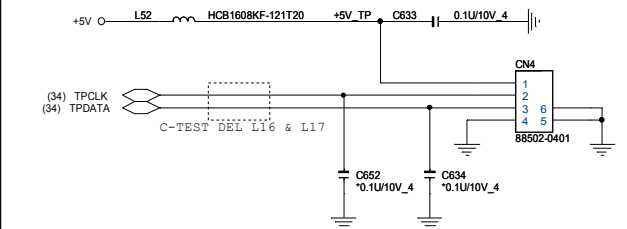
BLUETOOTH



LED



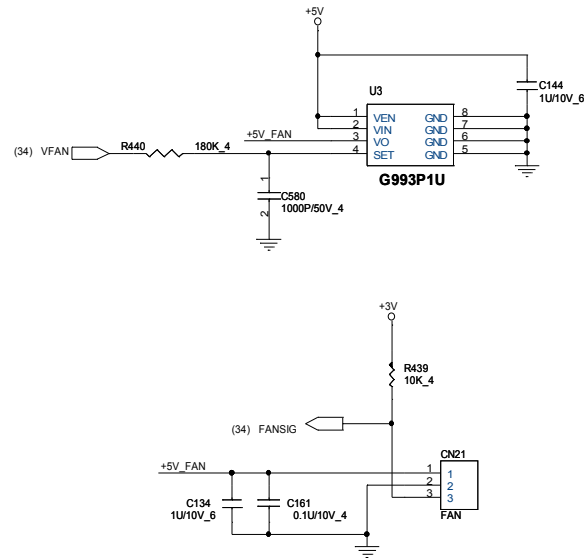
TOUCH PAD



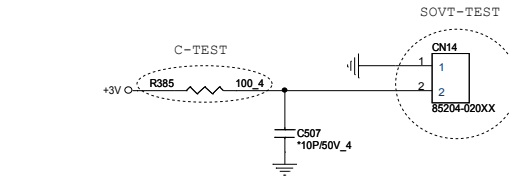
PROJECT : KL1
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Size Custom Document Number T/P, NEW CARD, B/T, LED Rev A1A
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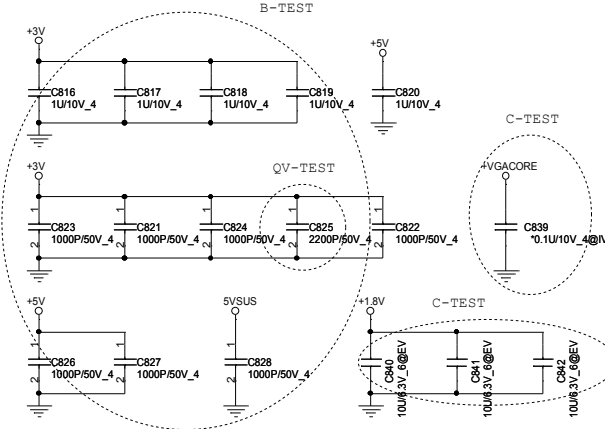
FAN CONTROL



Logo LED CONN

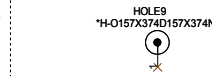


EMI CAPACITORS

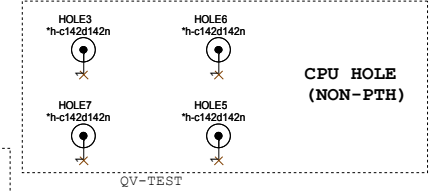


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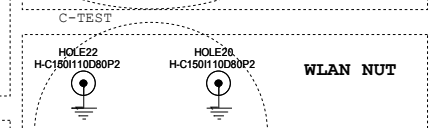
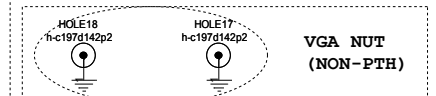
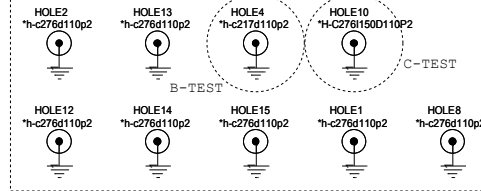
WLAN & WWAN CABLE HOLE (NON-PTH)



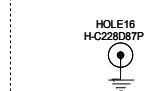
(NON-PTH)



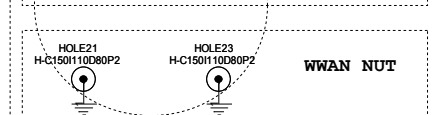
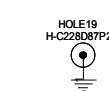
M/B SCREW HOLE



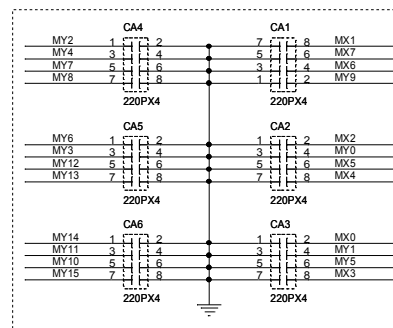
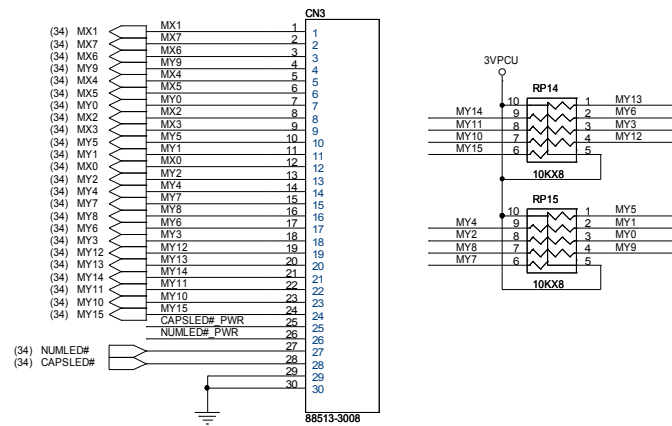
CHARGER+SIM/B NUT



POWER/B NUT

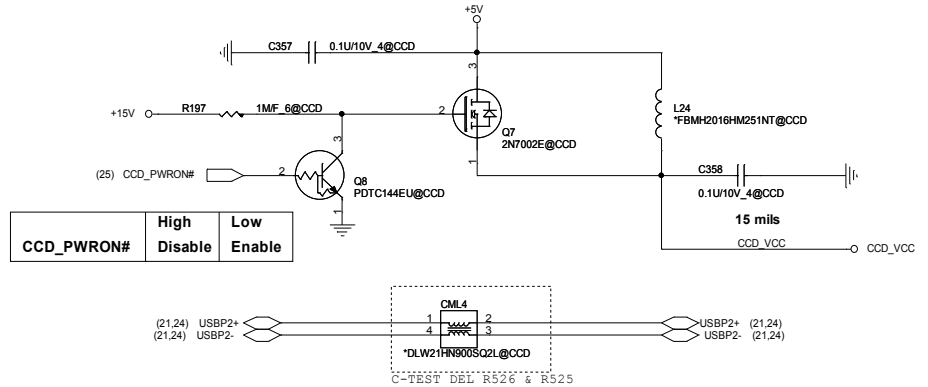


KEYBOARD

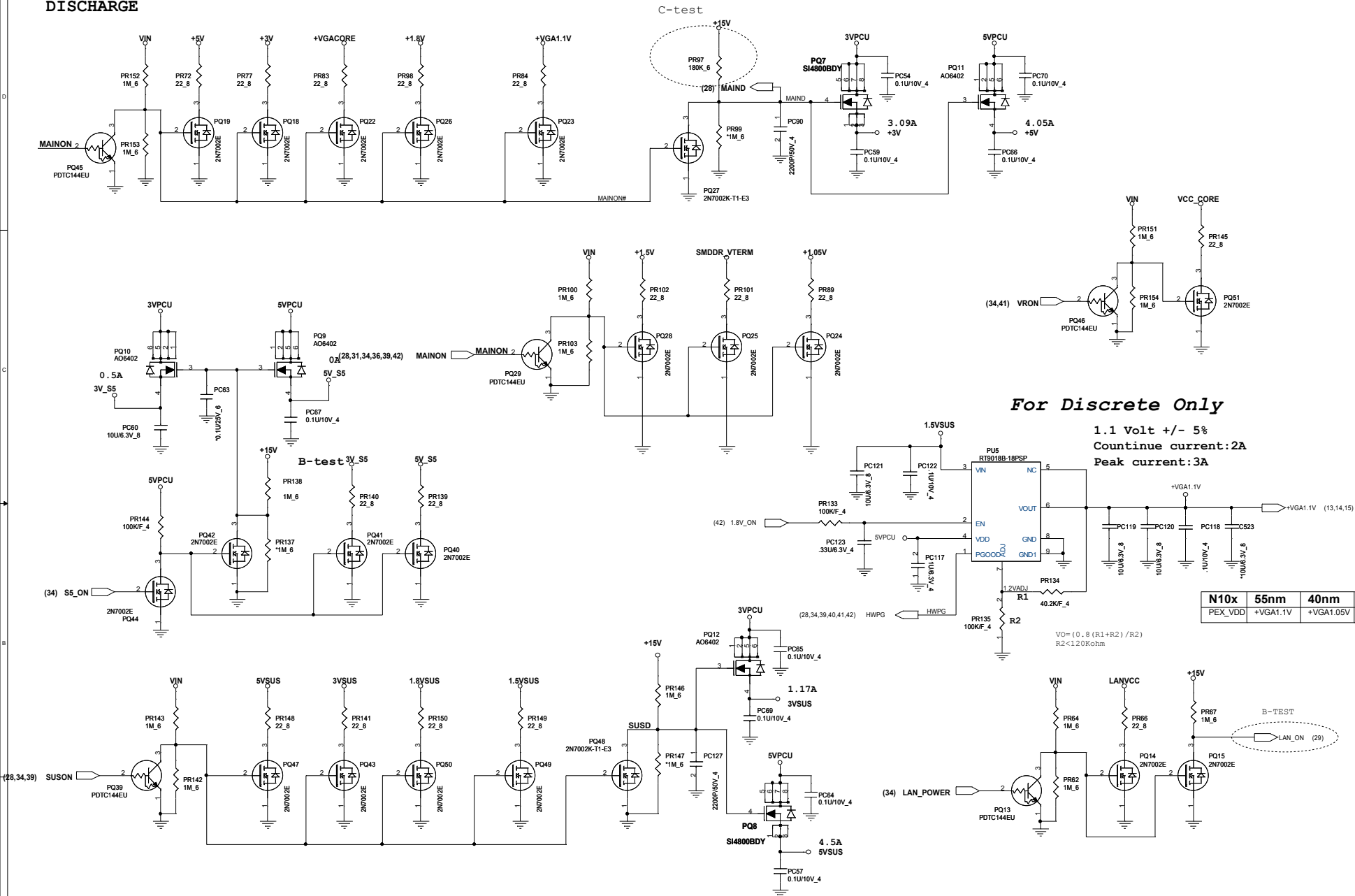


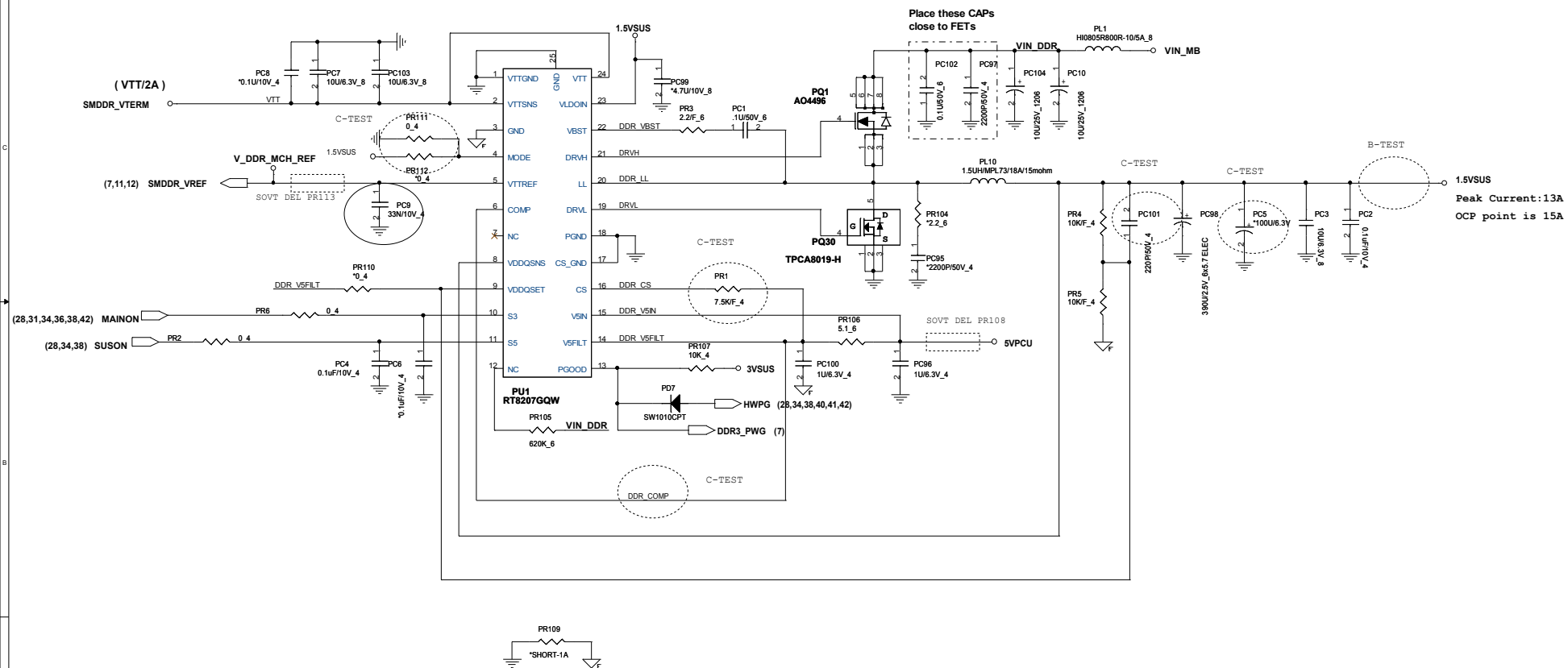
For EMI request

CCD MODULE



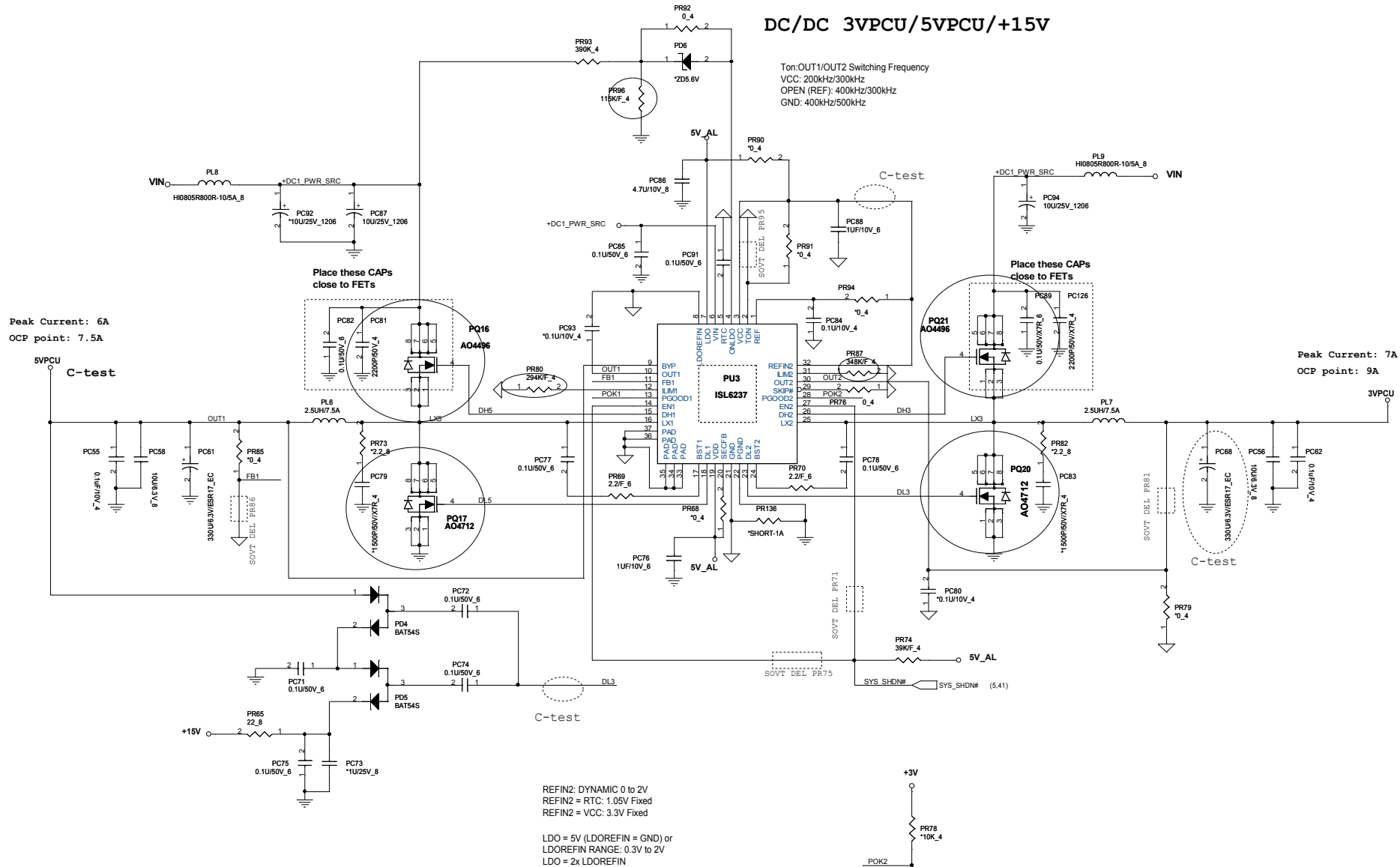
DISCHARGE





DC/DC 3VPCU/5VPCU/+15V

Ton:OUT1/OUT2 Switching Frequency
 VCC: 200kHz/300kHz
 OPEN (REF): 400kHz/300kHz
 GND: 400kHz/500kHz

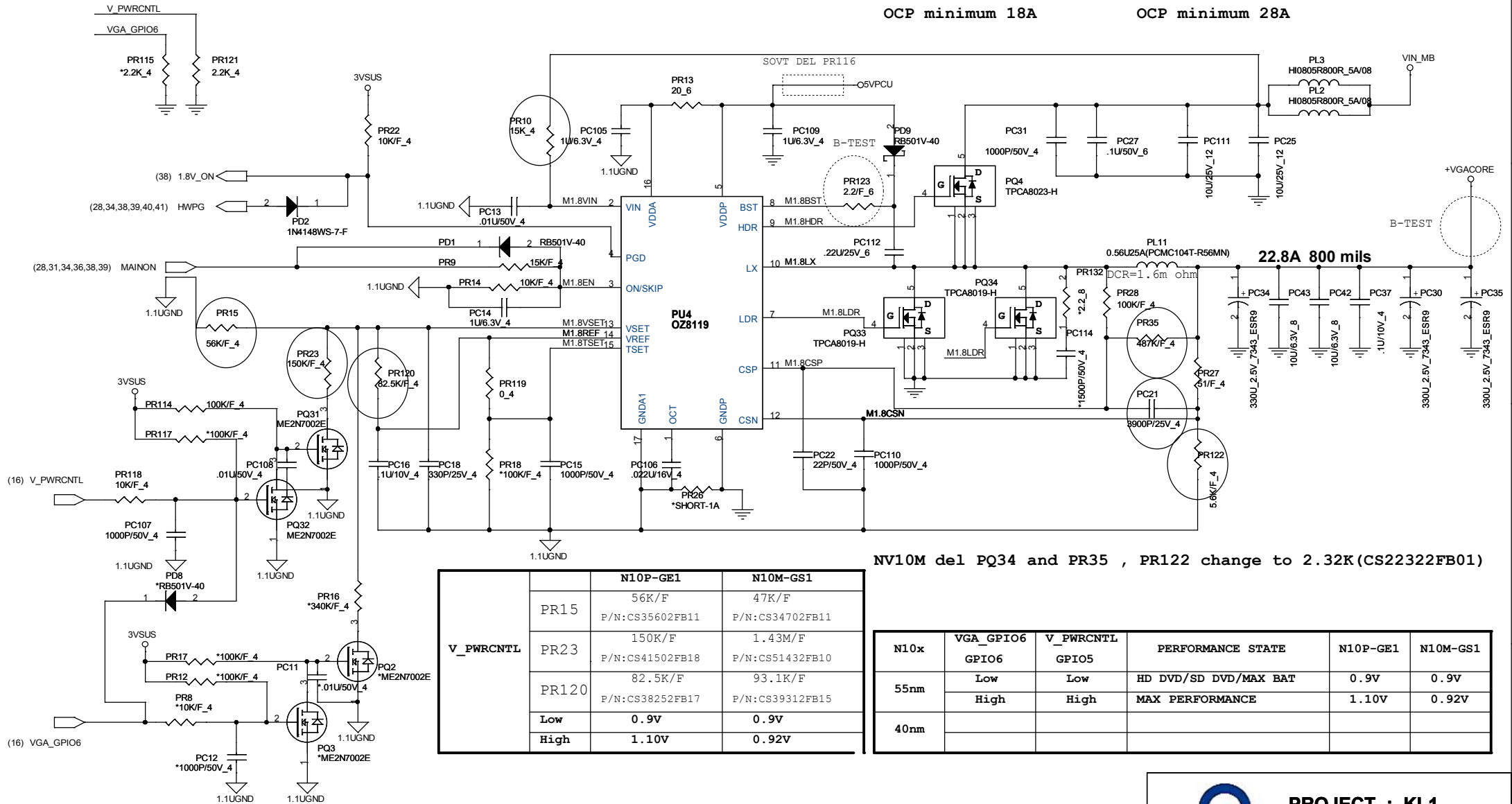


VGA Core & VCC1.1

NV10M +0.92Volt +/- 5%
 Countinue current:13A
 Peak current:16A
 OCP minimum 18A

NV10P +1.1Volt +/- 5%
 Countinue current:20A
 Peak current:23A
 OCP minimum 28A

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NV10M del PQ34 and PR35 , PR122 change to 2.32K(CS22322FB01)

V_PWRCNTL	N10P-GE1		N10M-GS1	
	PR15	56K/F P/N:CS35602FB11	47K/F P/N:CS34702FB11	
	PR23	150K/F P/N:CS41502FB18	1.43M/F P/N:CS51432FB10	
	PR120	82.5K/F P/N:CS38252FB17	93.1K/F P/N:CS39312FB15	
	Low	0.9V	0.9V	
	High	1.10V	0.92V	

N10x	VGA_GPI06 GPIO6	V_PWRCNTL GPIO5	PERFORMANCE STATE	N10P-GE1	N10M-GS1
55nm	Low	Low	HD DVD/SD DVD/MAX BAT	0.9V	0.9V
	High	High	MAX PERFORMANCE	1.10V	0.92V
40nm					



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 Rev A1A
 VGA Core (OZ8119)

KL1 SYSTEM POWER BLOCK DIAGRAM

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